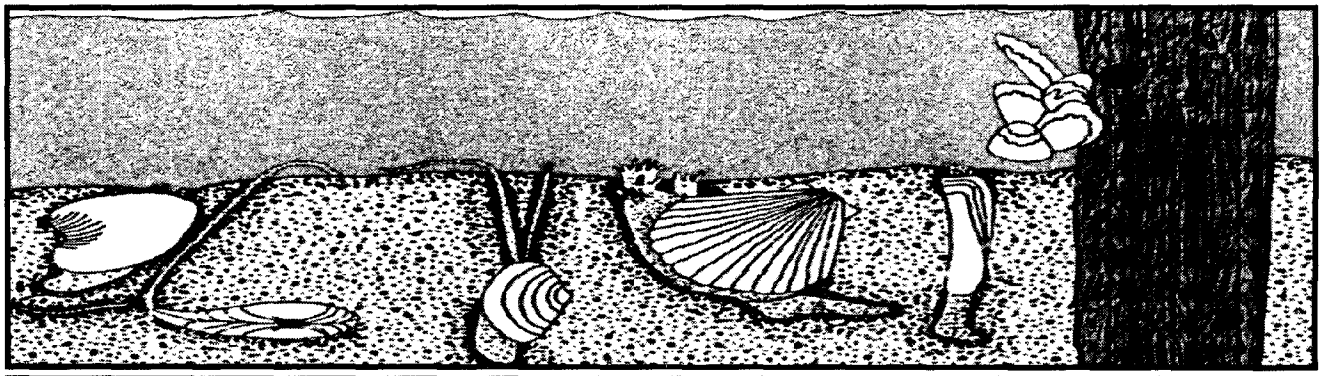
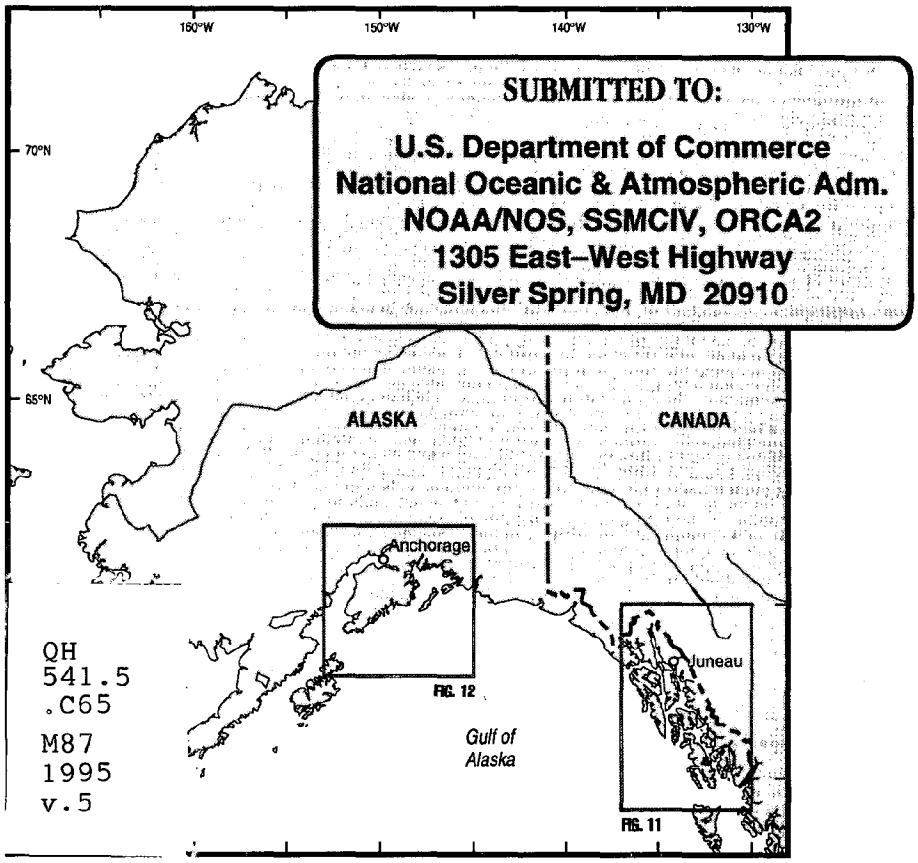
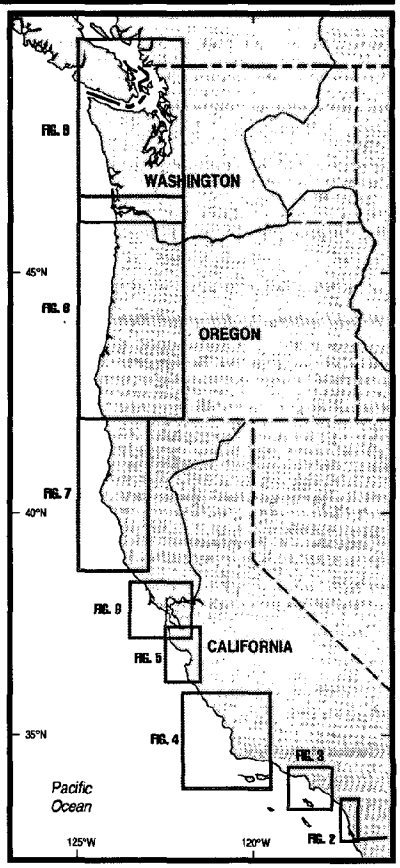
NOAA STATUS AND TRENDS
Mussel Watch Project

Volume 5: West Coast Site Descriptions

The Geochemical & Environmental Research Group







SUBMITTED TO:

U.S. Department of Commerce
National Oceanic & Atmospheric Adm.
NOAA/NOS, SSMCIV, ORCA2
1305 East–West Highway
Silver Spring, MD 20910

OCTOBER 1995

NOAA
NATIONAL STATUS AND TRENDS

Mussel Watch Program
Volume 5 - West Coast
Site Descriptions

1995

Prepared by

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Submitted to

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VOLUME 5 - WEST COAST SITE DESCRIPTIONS

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SITE DESCRIPTION OVERVIEW

The location of the West Coast (California through Washington) and Alaska NS&T Mussel Watch Program sampling sites are shown in Figures 1 through 12. Detailed descriptions for each of the individual sites are given in the following pages.

Each of the NS&T sites has a unique site number and designating code. The code is a four letter code, that is taken from the site's name and location, eg. MBML - Moss Landing Monterey Bay. The nominal site center is calculated from the mean of the three station locations at each of the sites. GPS navigation units were used to record all the site locations. These figures are a great deal more accurate and stable than the old Loran C figures, and generally tend to coincide with the map locations. The site descriptions include information that will enable an individual to easily find the site, and the boat ramp if so necessary.

For each site, the following components are included:

- Detailed description
- Road map to the site
- Nautical chart of the site
- Photographs of the site. Photographs, when available, are arranged in a clockwise manner starting in the upper left hand corner with an aerial view and then Stations 1, 2 and 3, respectively.

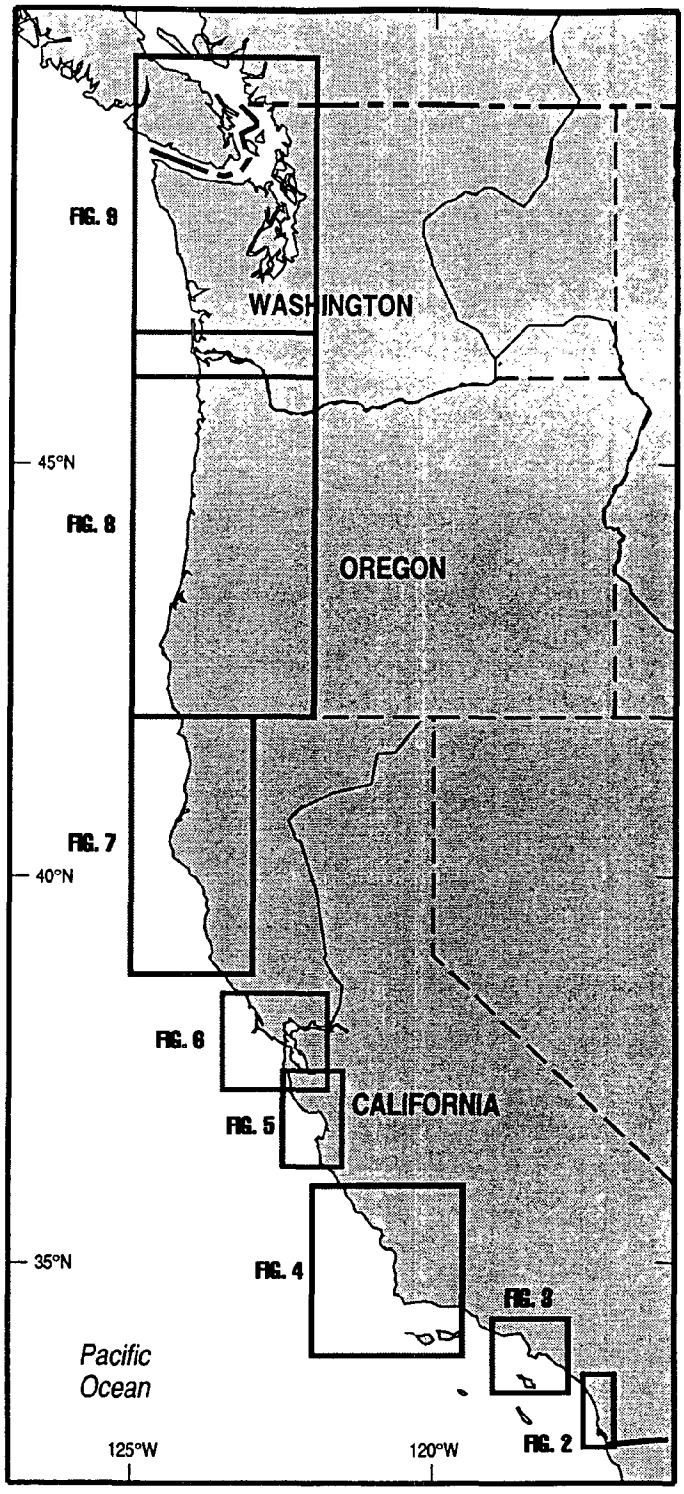


Figure 1. Location of the West Coast Sites.

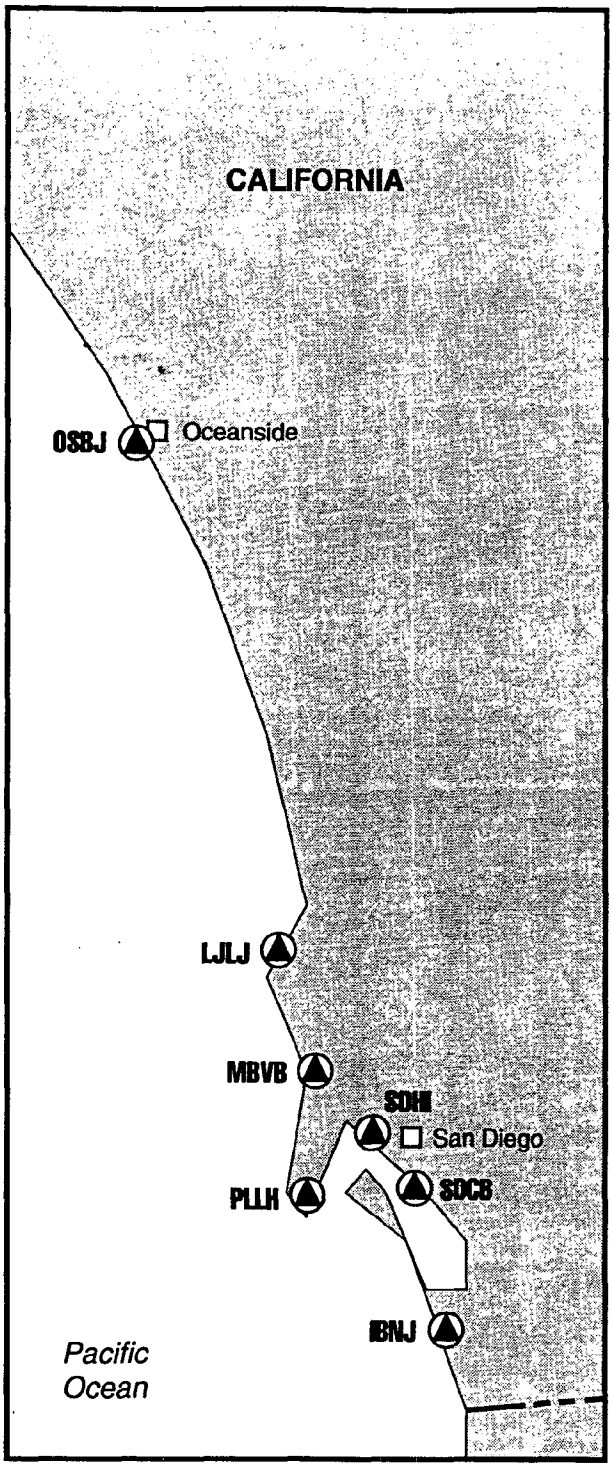


Figure 2. Location of the San Diego area Sites (see Figure 1 for the location on the West Coast).

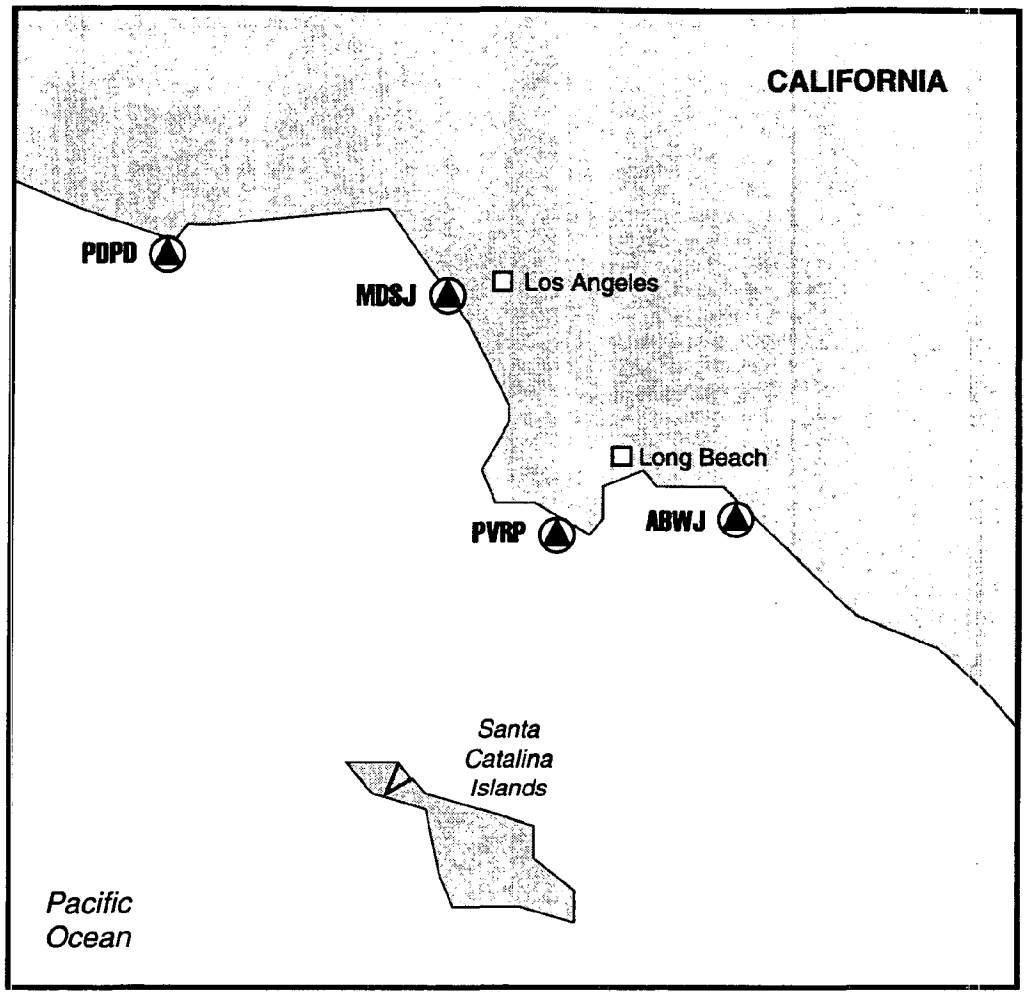


Figure 3. Location of the Los Angeles area Sites (see Figure 1 for the location on the West Coast).

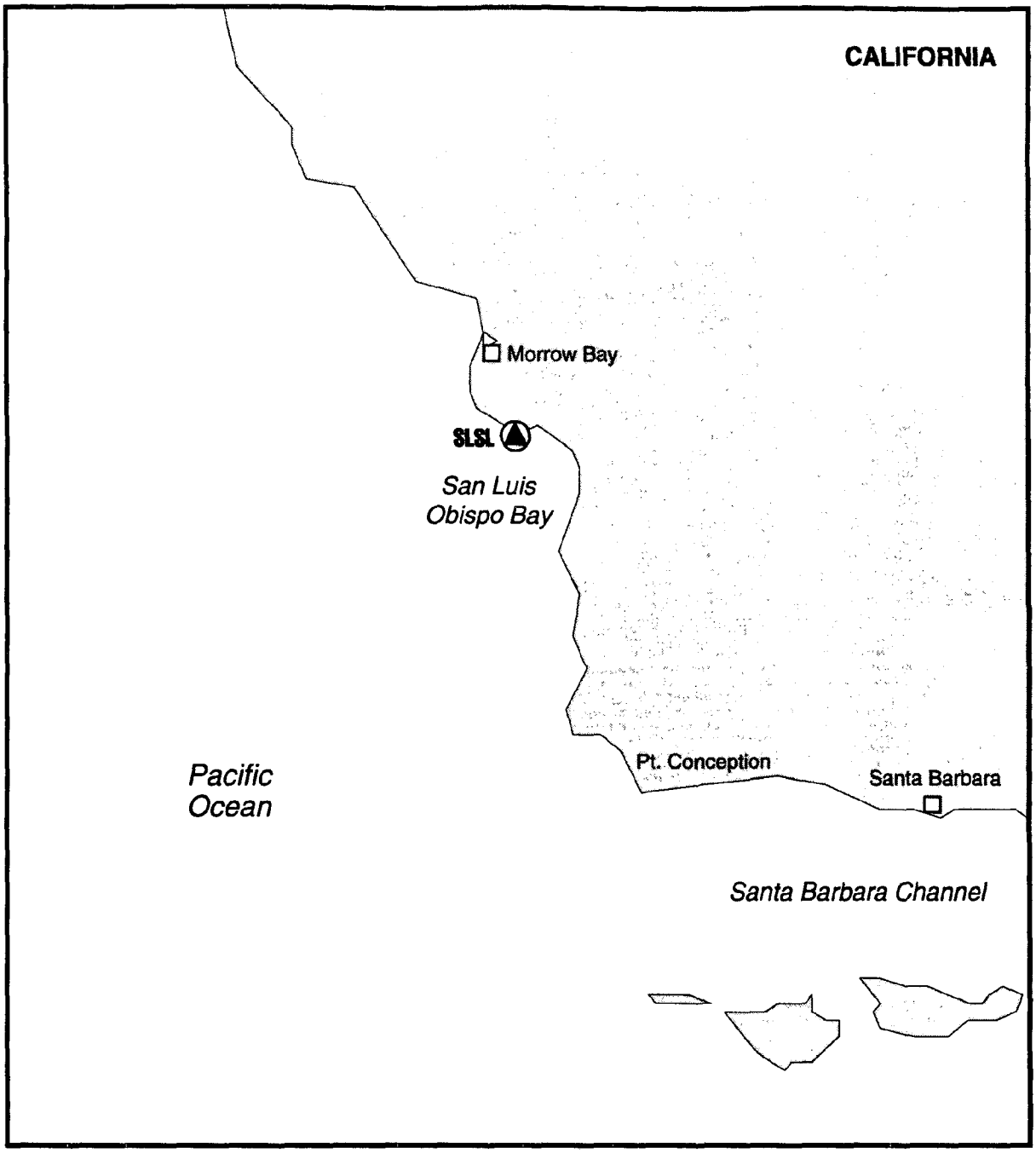


Figure 4. Location of the South Central California Sites (see Figure 1 for the location on the West Coast).

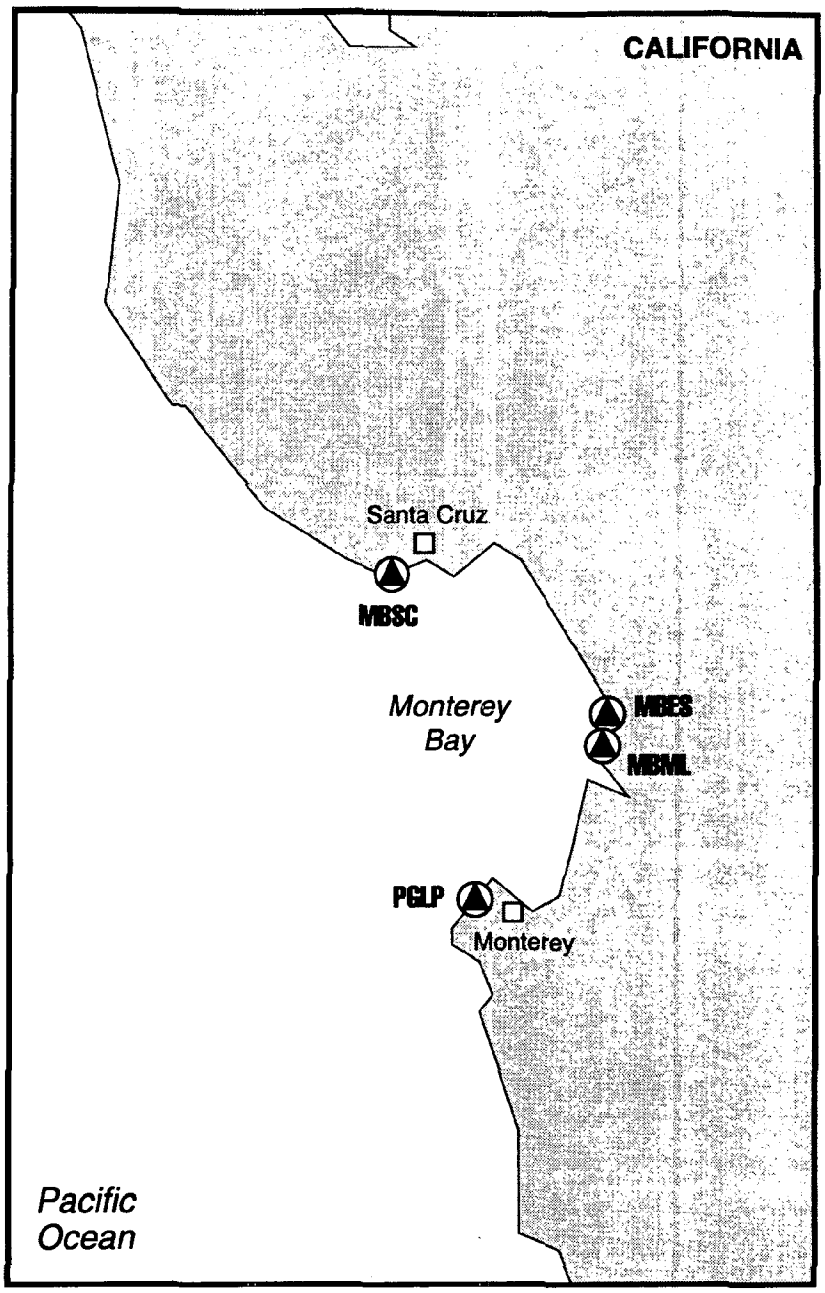


Figure 5. Location of the Monterey Bay area Sites (see Figure 1 for the location on the West Coast).

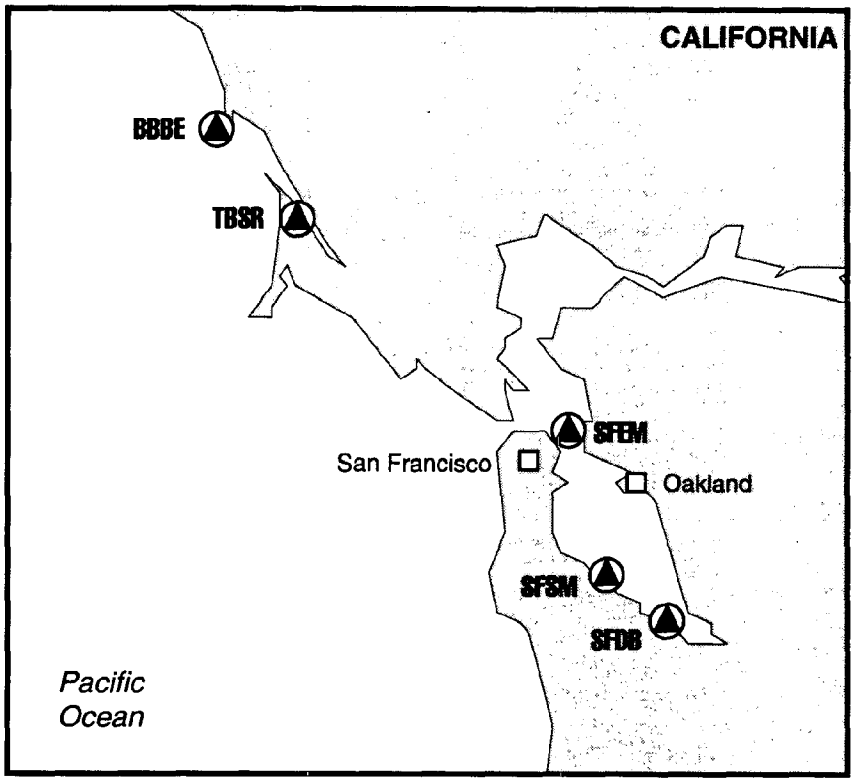


Figure 6. Location of the San Francisco Bay area Sites (see Figure 1 for the location on the West Coast).

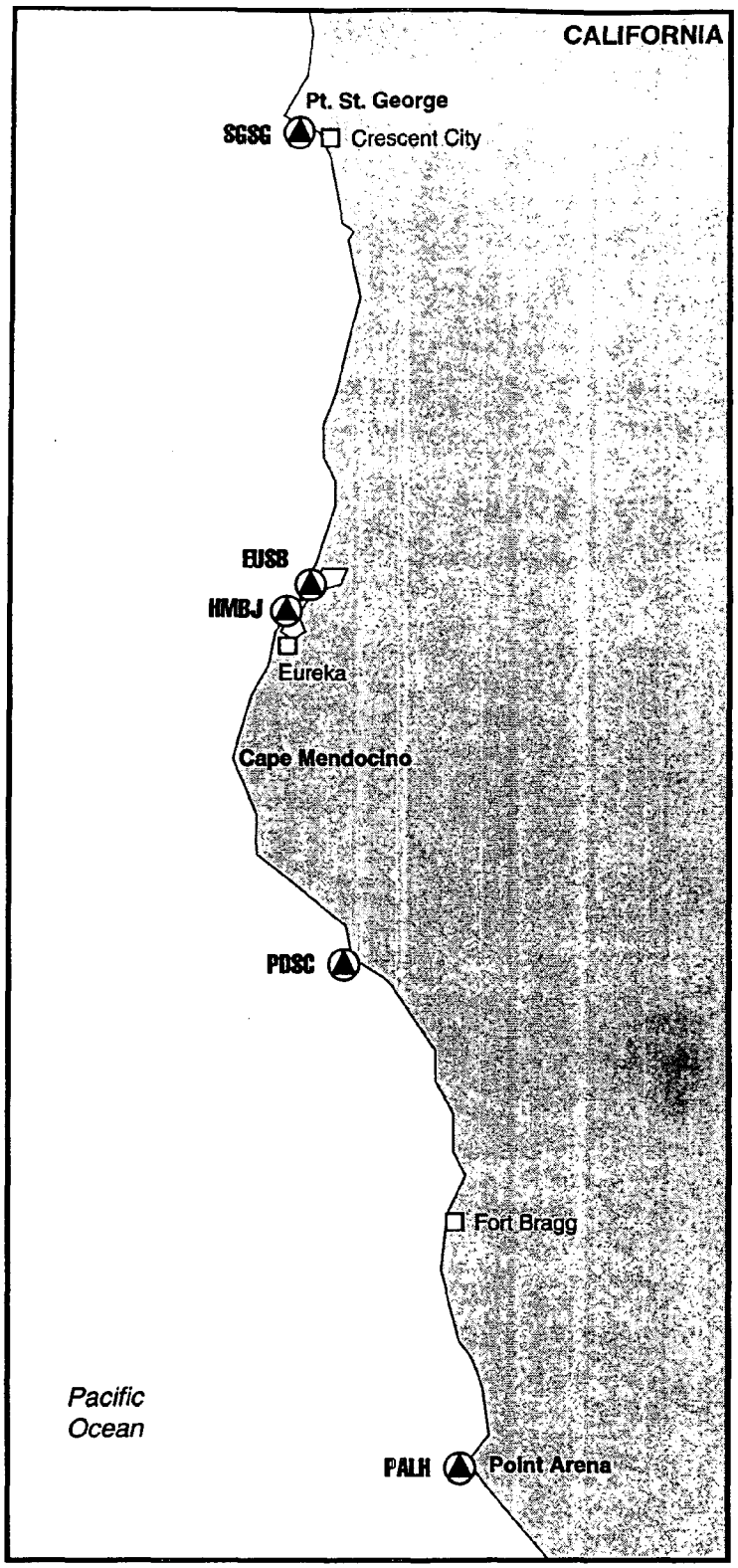


Figure 7. Location of the Northern California Sites (see Figure 1 for the location on the West Coast).

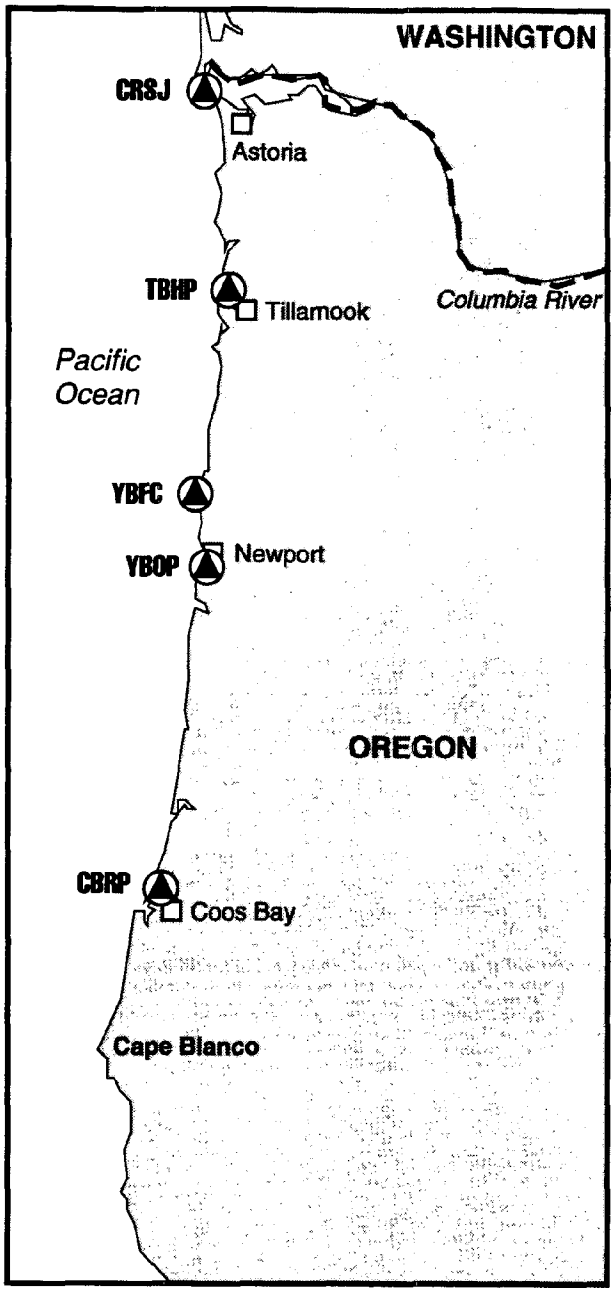


Figure 8. Location of the Oregon Sites (see Figure 1 for the location on the West Coast).

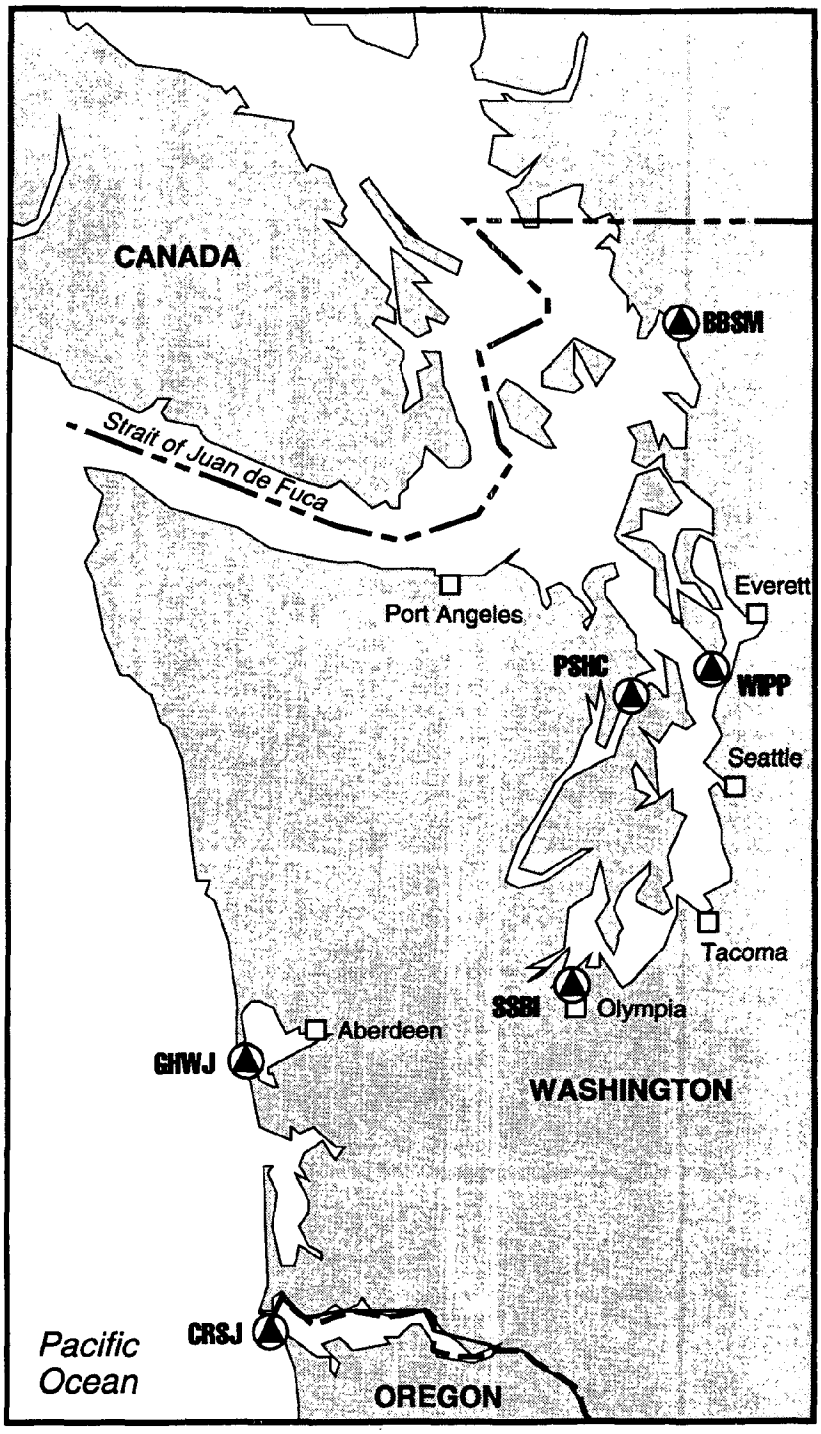


Figure 9. Location of the Washington Sites (see Figure 1 for the location on the West Coast).

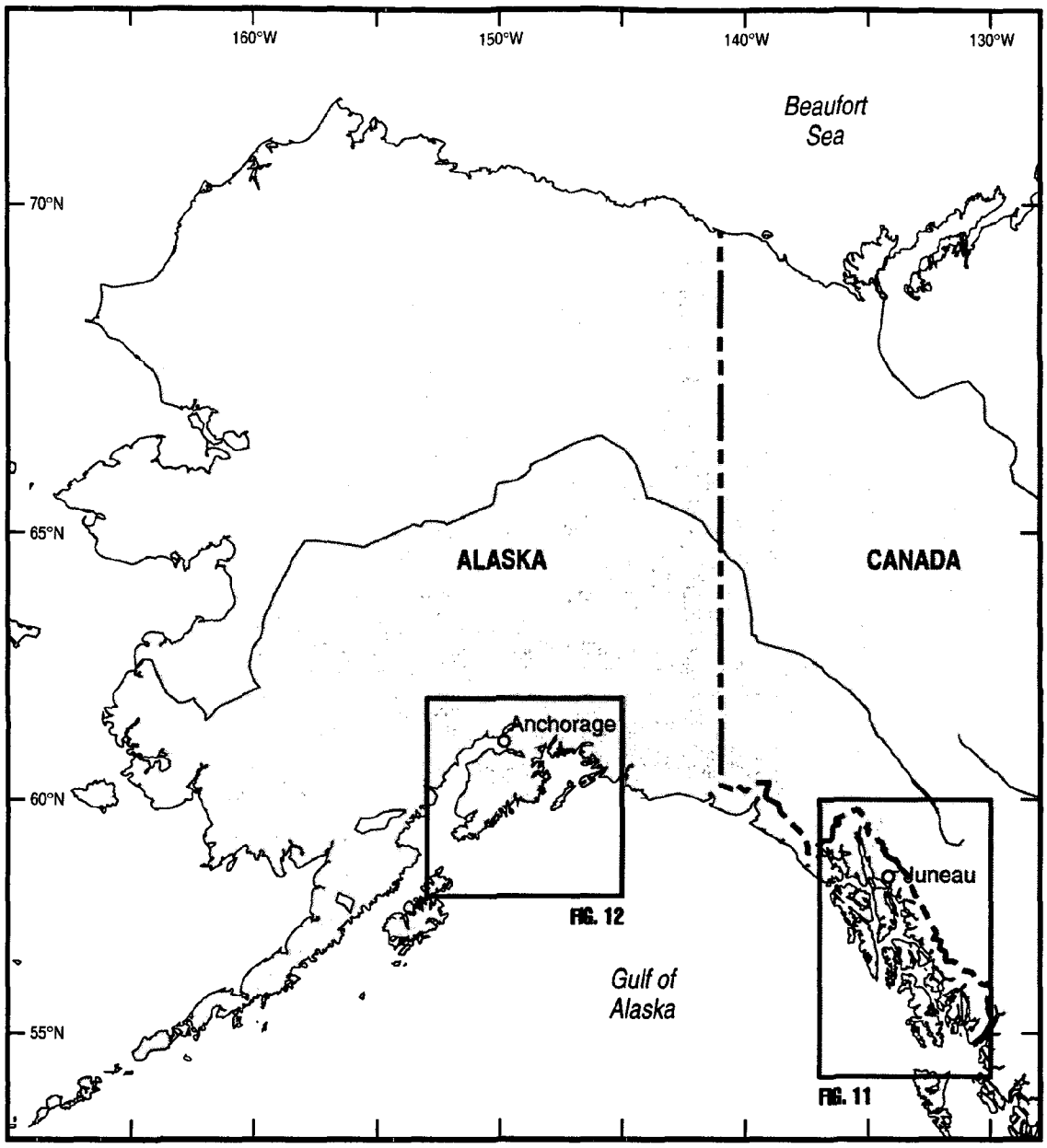


Figure 10. Location of the Alaskan Sites.

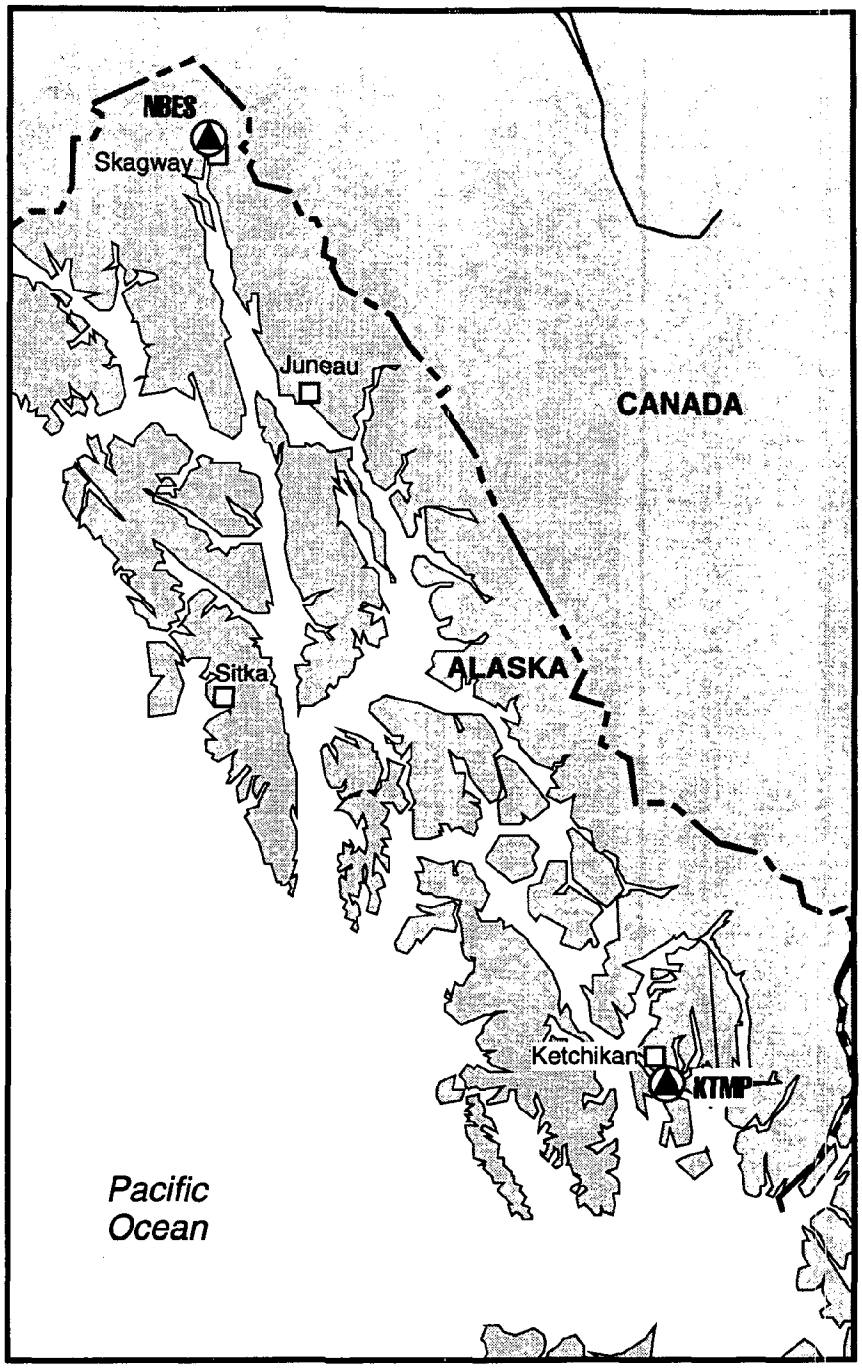


Figure 11. Location of the Alaska Panhandle area Sites (see Figure 10 for the location on the West Coast).

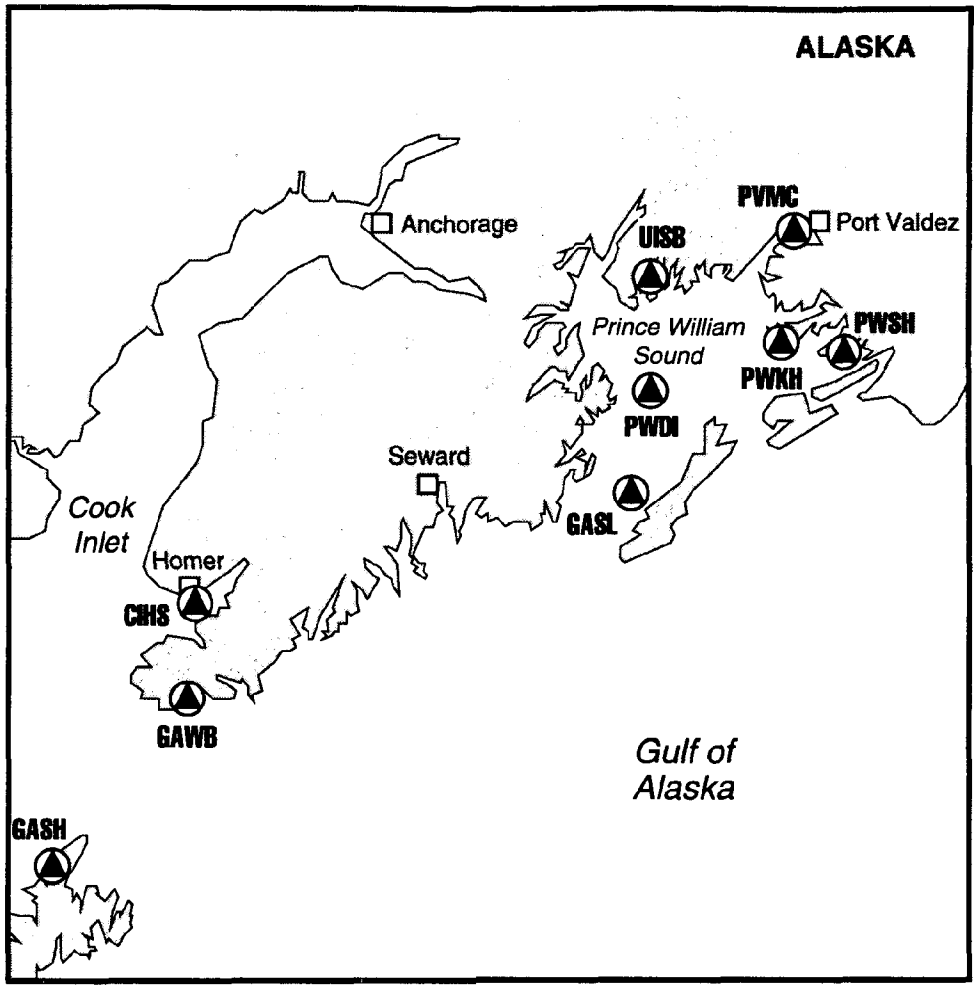


Figure 12. Location of the Prince William Sound and Gulf of Alaska Sites (see Figure 10 for the location on the Alaskan Coast).

CALIFORNIA SITES

GERG SITE NUMBER - 401 **DESIGNATOR** - IBNJ

SITE - NORTH JETTY, IMPERIAL BEACH, CA

NOMINAL SITE CENTER - 32° 35.26'N 117° 08.01'W

LOCATED ON NOS CHART # - 18772

SITE ACCESS - This site is located on a jetty at the north end of Imperial Beach. From Interstate 5 south in Imperial Beach, take the Palm Avenue exit west to Seacoast Drive. Turn right (north) onto Seacoast Drive and park near Carnation Avenue. Walk to the end of Carnation Avenue and around the vehicle gate. The jetty is to the right (north) approximately 150 meters.

SITE DESCRIPTION - The site center is below the tallest rock on the jetty, approximately 2/3 of the way out to the seaward end of the jetty. The three discrete collection stations were on the south side of the jetty, with the middle station located directly below the site center, and the other two stations approximately 15 meters inshore and offshore of the center station.

BIVALVE COLLECTIONS

1995 *Mytilus californianus* was the target species and they were present in high numbers and in a wide range of sizes. Collected organisms ranged from approximately 50–80 millimeters in shell length.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

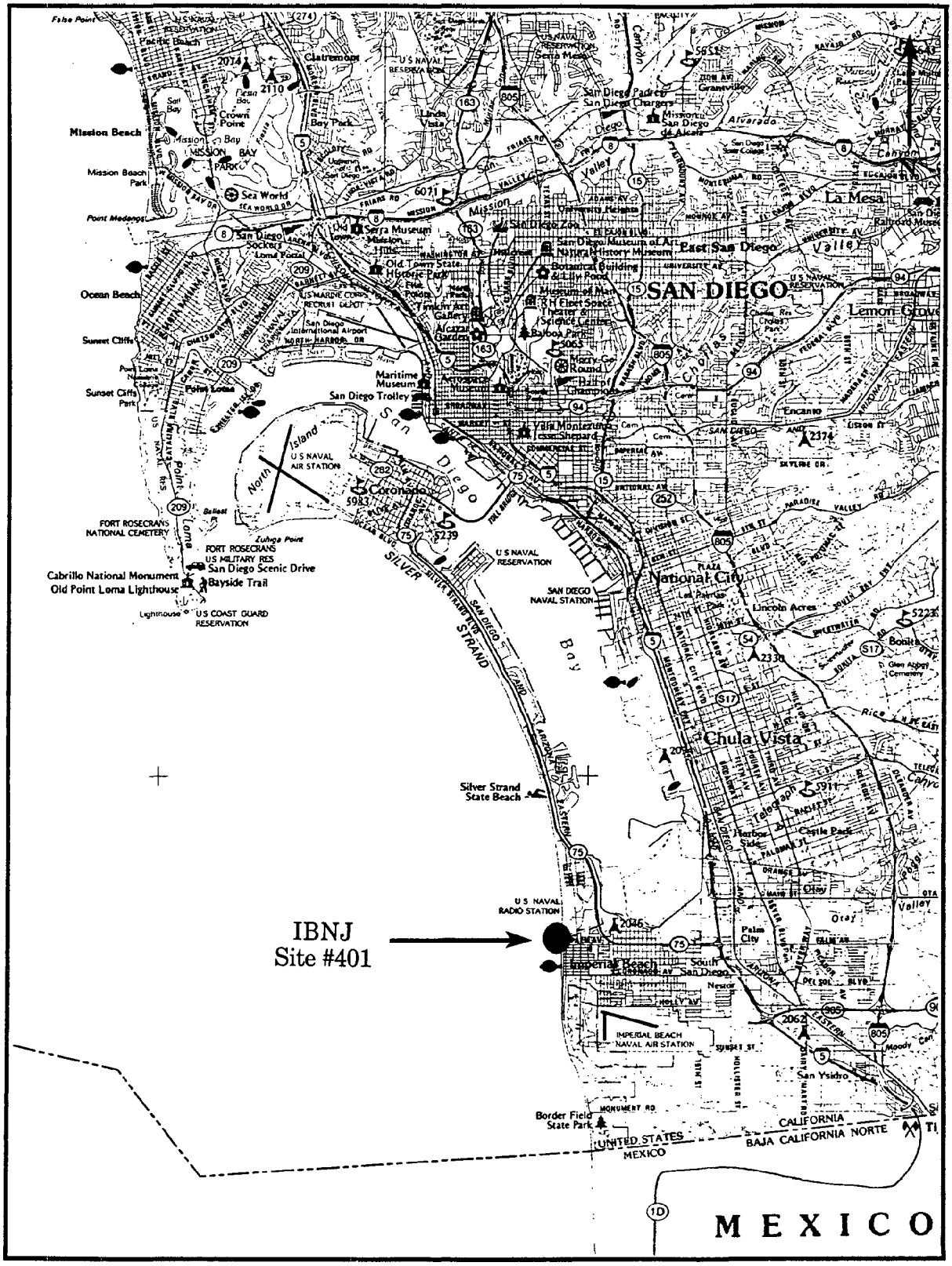
Bivalves - hand
Sediments - NA

WATER DEPTH - +0.5 m MLLW

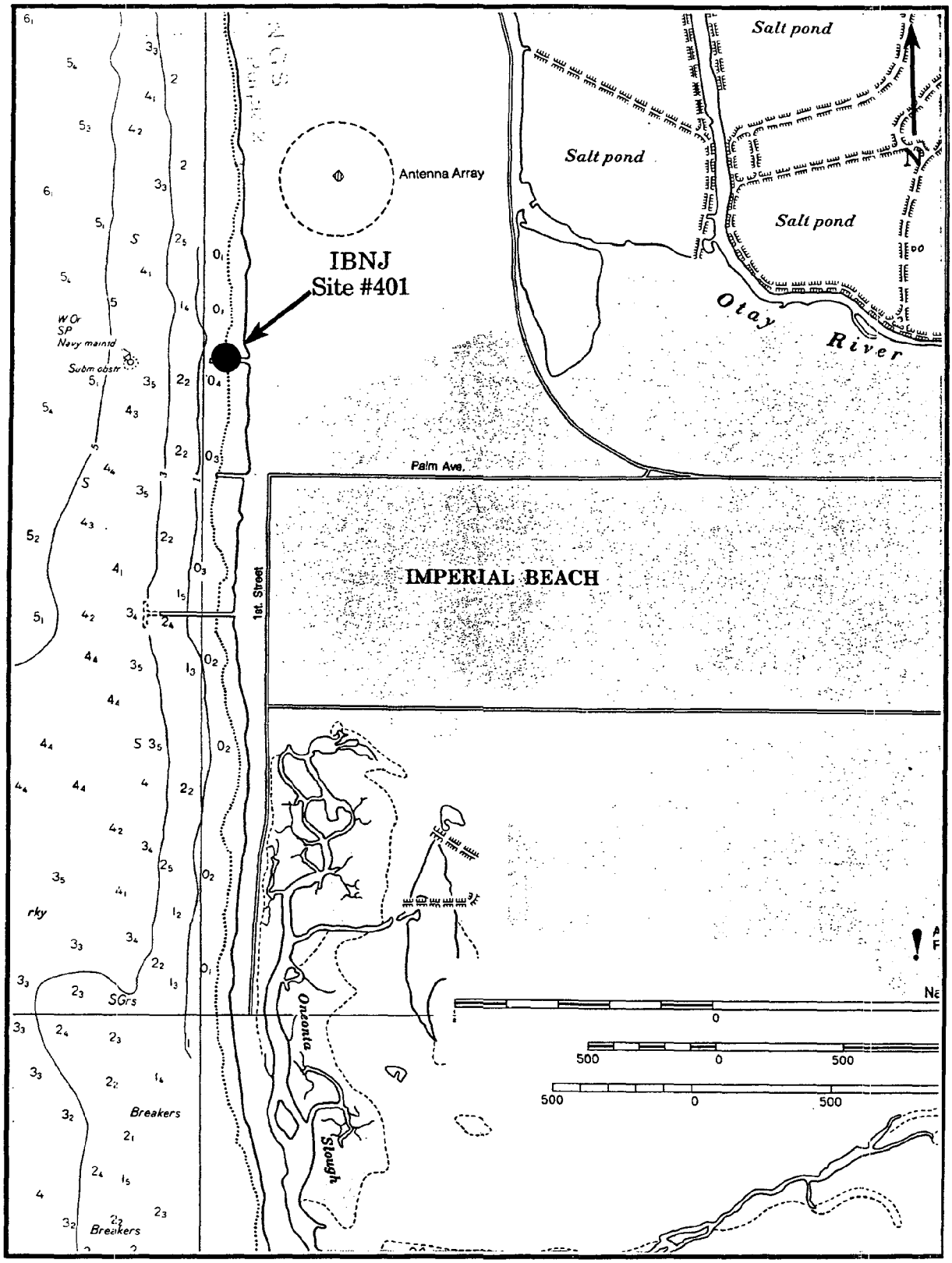
POSSIBLE CONTAMINANTS - There were no obvious nearby sources of contaminants, although the Tijuana River estuary empties into the ocean approximately 1.9 miles south of the site.

ENVIRONMENTAL DATA

Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	24.0	14.9	12 December 1994



Site #401 (IBNJ), Imperial Beach North Jetty.



Site #401 (IBNJ), Imperial Beach North Jetty (from chart 18772).

Site #401 (IBNJ), Imperial Beach North Jetty.

GERG SITE NUMBER - 402 **DESIGNATOR** - SDCB

SITE - CORONADO BRIDGE, SAN DIEGO BAY, CA

NOMINAL SITE CENTER - 32° 41.19'N 117° 09.55'W

LOCATED ON NOS CHART # - 18773

SITE ACCESS - This site is located on the Coronado Bridge across San Diego Bay. From Interstate 5 south in San Diego, take the Rosecrans (Highway 209) exit and proceed south approximately 3 miles to Shelter Island Drive. Turn left (east) onto Shelter Island Drive (note that a right turn at the intersection puts you onto Byron Street) and proceed east to the rotary. The launch ramp is just to the right of the rotary. Take the boat east from the launch ramp, around the north end of North Island and then south to the Coronado Bridge (about a 20-minute ride).

SITE DESCRIPTION - The concrete bridge supports are numbered consecutively, with the lowest numbers on the western side of the channel. The site center was bridge support #10, with samples being collected from the west side of supports #9, #11, and #12.

BIVALVE COLLECTIONS

1995 *Mytilus edulis* was plentiful on the bridge supports and had oysters or scallops, barnacles and the green alga *Ulva* growing on them. Collected organisms ranged from approximately 35–60 millimeters in shell length.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

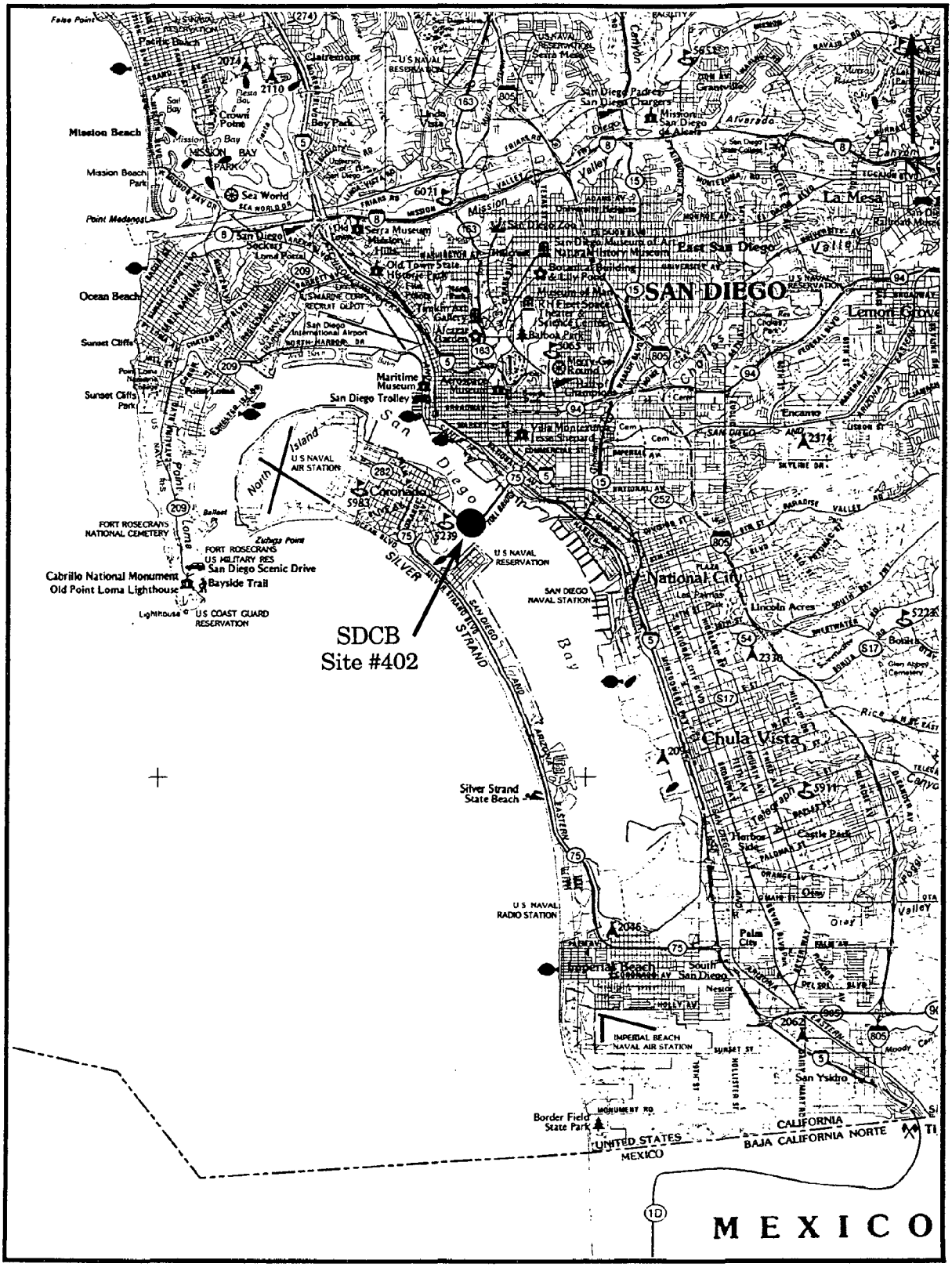
Bivalves - hand
Sediments - NA

WATER DEPTH - +0.75 m MLLW

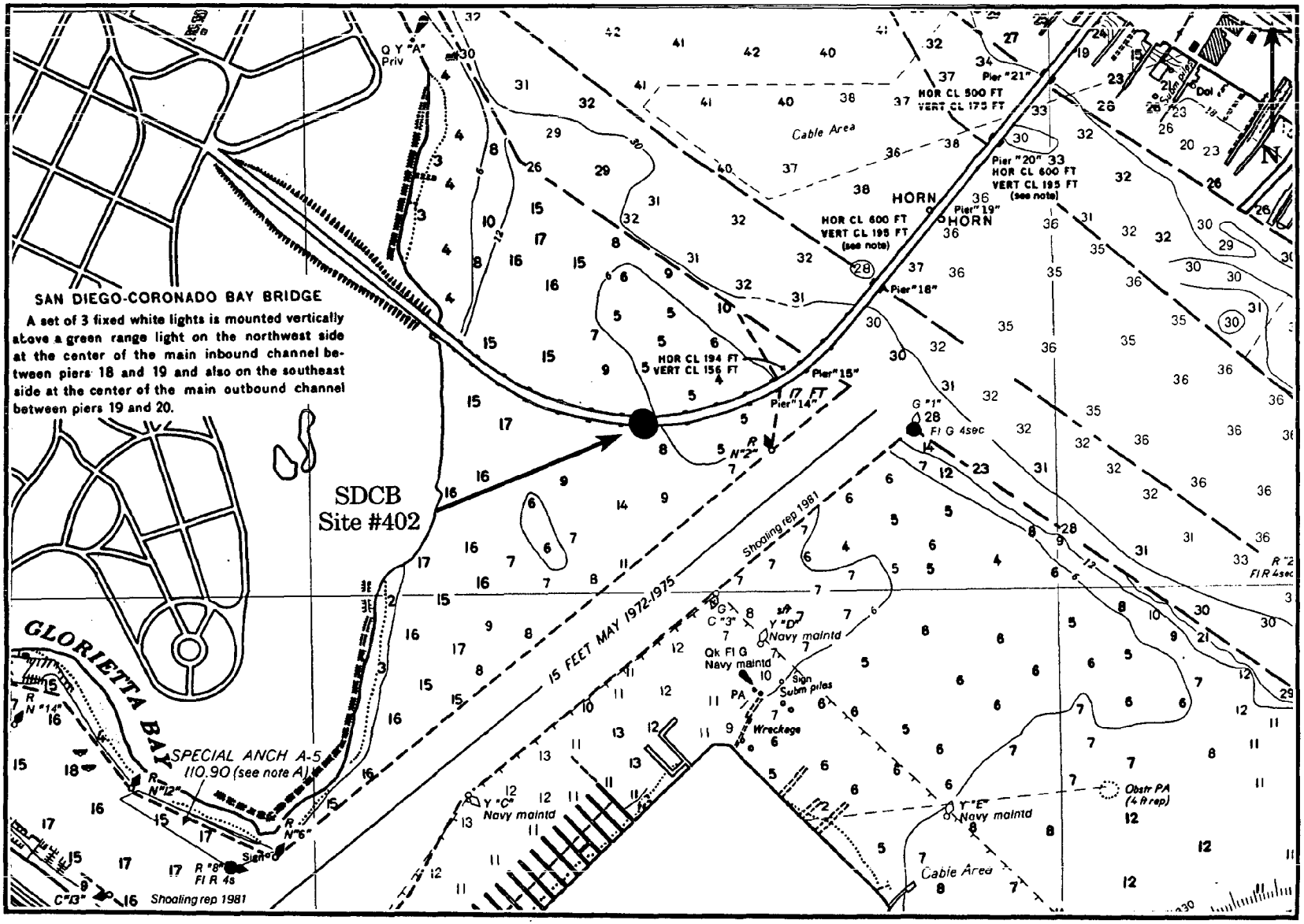
POSSIBLE CONTAMINANTS - San Diego Bay is the site of a large U.S. Navy base and several commercial shipyards. Urban storm runoff also is discharged to the bay.

ENVIRONMENTAL DATA

Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	33.0	14.8	14 December 1994



Site #402 (SDCB), San Diego Bay Coronado Bridge.



Site #402 (SDCB), San Diego Bay Coronado Bridge. (from chart 18773).

Site #402 (SDCB), San Diego Bay Coronado Bridge.

GERG SITE NUMBER - 403 **DESIGNATOR** - PLLH

SITE - LIGHTHOUSE, POINT LOMA, CA

NOMINAL SITE CENTER - 32°40.83'N 117°14.93'W

LOCATED ON NOS CHART # - 18773

SITE ACCESS - From Interstate 5 in San Diego, take the Highway 209 (Rosecrans) exit south. Follow Highway 209 to the Cabrillo National Monument. Highway 209 follows, in sequence, Rosecrans Street, Cañon Street, Catalina Boulevard, and Cabrillo Memorial Drive. Just prior to the gate into Cabrillo National Monument, take the road to the right past the lighthouse to the Point Loma Wastewater Treatment Plant. At the lighthouse, follow the road as it doubles back toward the north to the treatment plant. Check in at the Administration Building. At the Administration Building, take the left fork and head down toward the water. Proceed to where the road ends, adjacent to a concrete spillway that directs storm runoff from the street down toward the ocean. Climb down the boulders below the spillway to a series of rock benches 10–15 meters south.

SITE DESCRIPTION - The site center is the highest bluff above the cliff 10 meters south of the end of the road. Collection stations were on the rocky benches at the base of the cliff below the bluff. The site is too small and the mussels were too sparse to support designation of discrete collection stations.

BIVALVE COLLECTIONS

1995 *Mytilus californianus* was collected from the sparse population of small organisms distributed among the turf of corraline algae on the rock benches. *Mytilus edulis* was also observed, so care was necessary to prevent mixing both species in the sample. Collected organisms ranged from approximately 30–55 millimeters in shell length.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

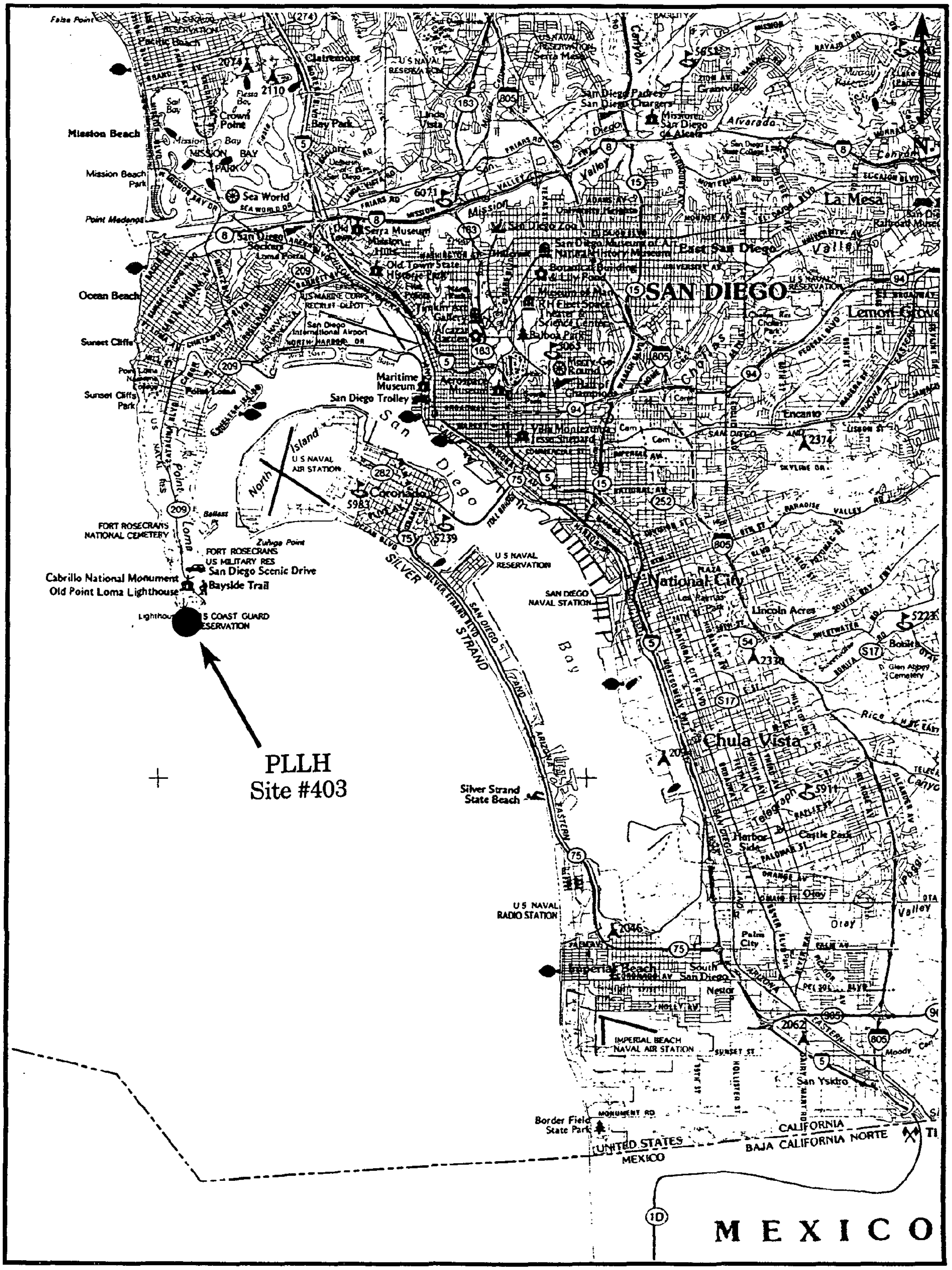
Bivalves - hand
Sediments - NA

WATER DEPTH - +1.0 m MLLW

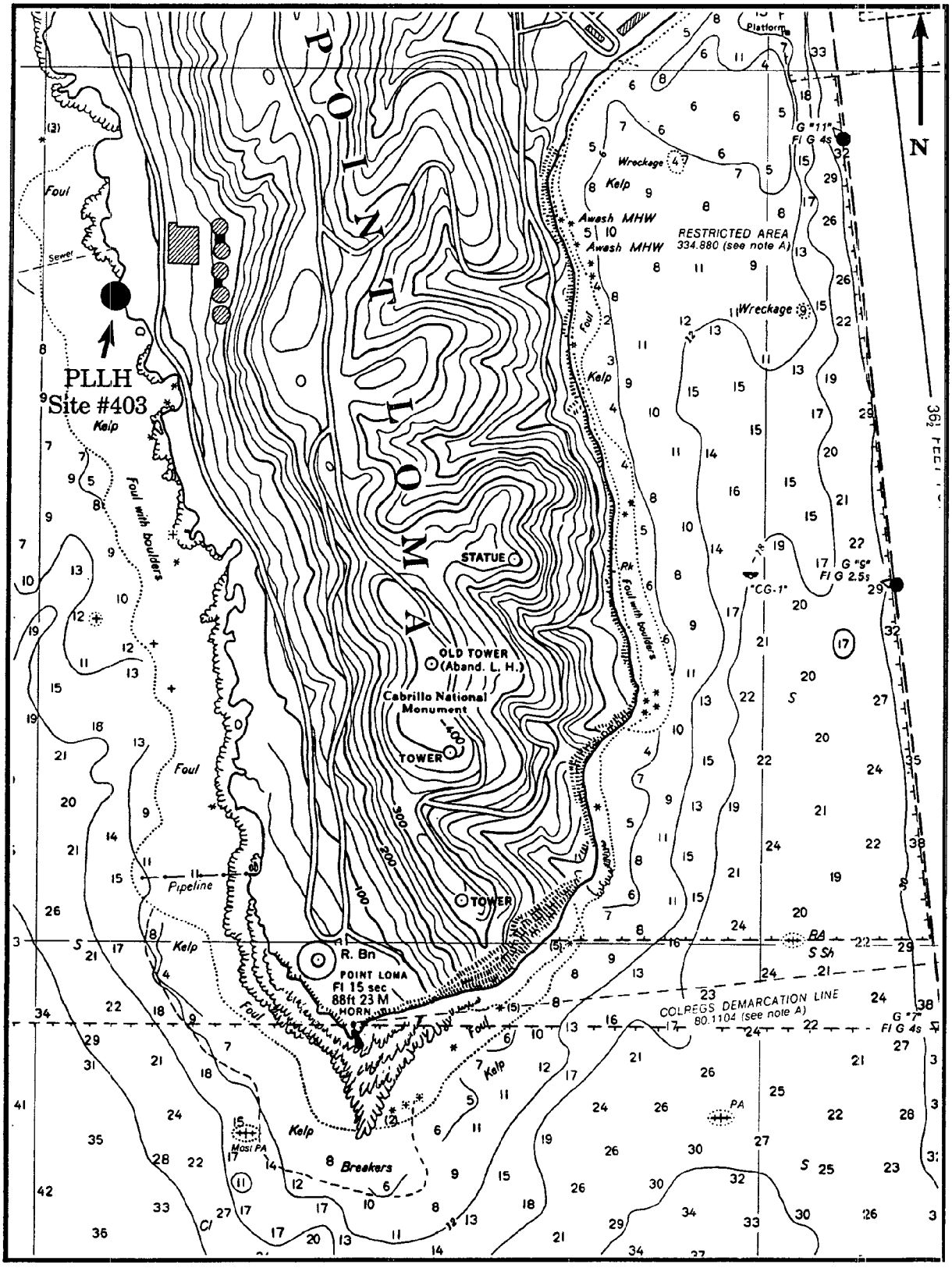
POSSIBLE CONTAMINANTS - No obvious nearby sources of contaminants were observed, except for the street runoff spillway 10–15 meters to the north.

ENVIRONMENTAL DATA

Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	25.5	15.4	12 January 1995



Site #403 (PLLH), Point Loma Lighthouse.



Site #403 (PLLH), Point Loma Lighthouse (from chart 18773).

Site #403 (PLLH), Point Loma Lighthouse.

GERG SITE NUMBER - 404 **DESIGNATOR** - SDHI

SITE - HARBOR ISLAND, SAN DIEGO BAY, CA

NOMINAL SITE CENTER - 32° 43.48'N 117° 11.68'W

LOCATED ON NOS CHART # - 18773

SITE ACCESS - This site is on the south shore of Harbor Island, at the north end of San Diego Bay. From Interstate 5 south in San Diego, take the Sassafras Street exit and follow the signs toward San Diego Airport. On Harbor Drive near the airport, take the Harbor Island exit. When the road ends at the water, take Harbor Island Drive to the left (east). Park in the first pull-out, just past the first palm tree east of the intersection.

SITE DESCRIPTION - The site center is a pyramid-shaped rock at 0.0 meters MLLW on the steep boulder-covered bank between the palm tree and the first sidewalk bench west of the palm tree. The middle discrete collection station was the pyramid-shaped rock, with the other two stations being approximately 20 meters on either side.

BIVALVE COLLECTIONS

1995 *Mytilus edulis* occurred in clusters in crevices between cobbles that covered the steep bank. Searching was required to collect sufficient numbers. Collected organisms ranged from approximately 30–50 millimeters in shell length.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

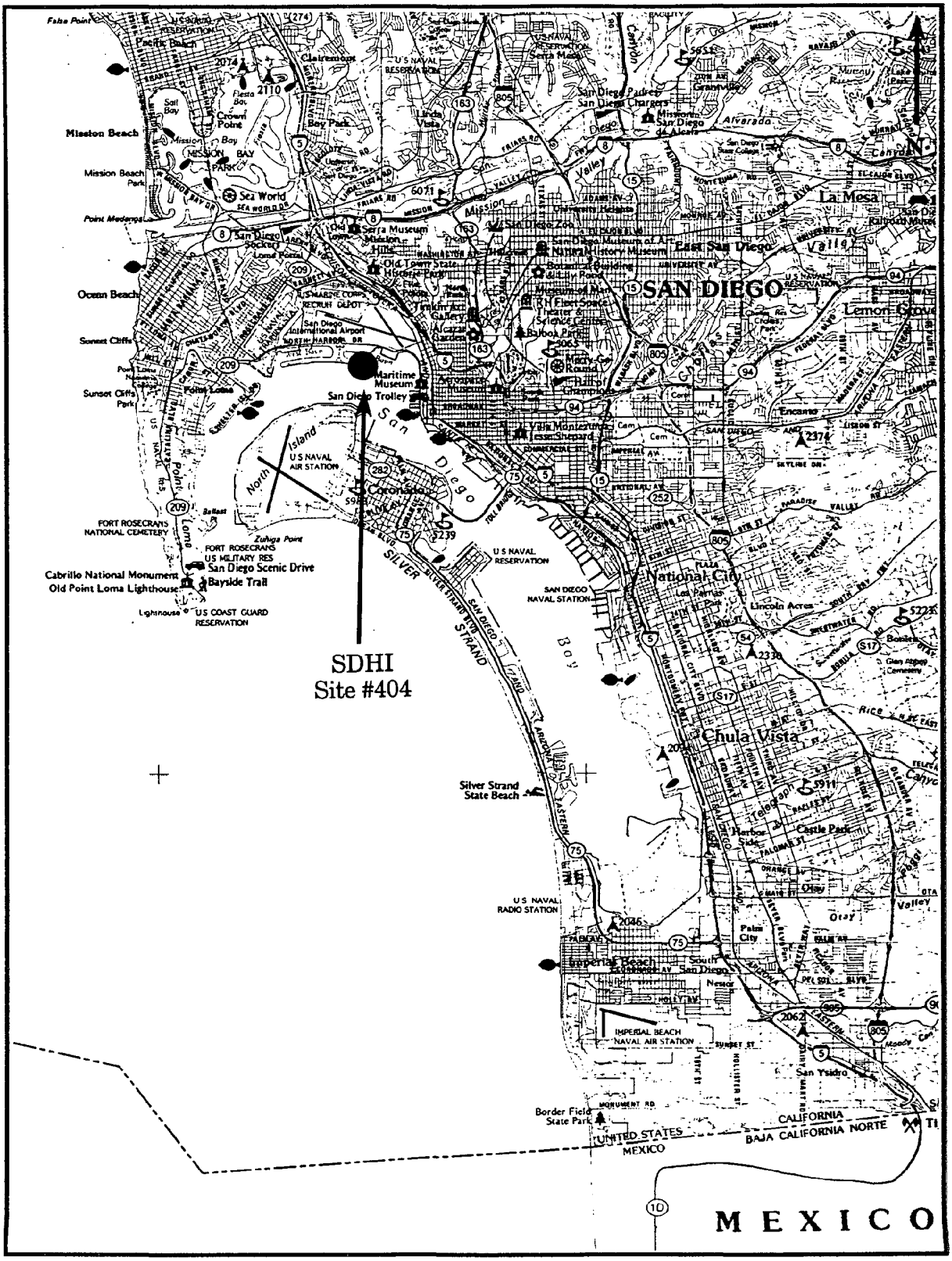
Bivalves - hand
Sediments - NA

WATER DEPTH - +0.5 m MLLW

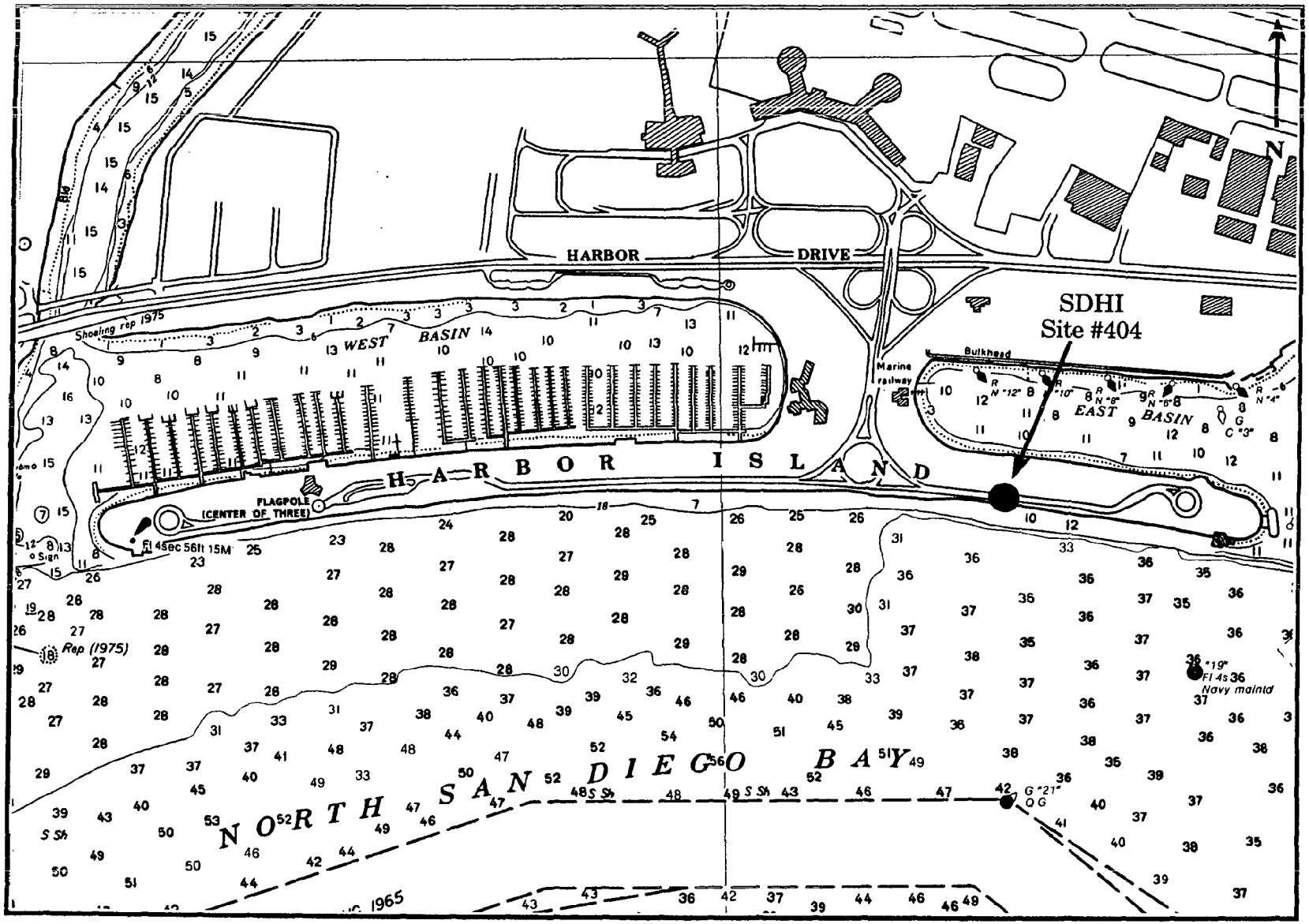
POSSIBLE CONTAMINANTS - San Diego Bay is the site of a large U.S. Navy base and several commercial shipyards. There were also several storm drains that empty into the bay near the site.

ENVIRONMENTAL DATA

Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	34.5	15.0	13 December 1994



Site #404 (SDHI), San Diego Bay Harbor Island.



Site #404 (SDHI), San Diego Bay Harbor Island (from chart 18773).

Site #404 (SDHI), San Diego Bay Harbor Island.

GERG SITE NUMBER - 405 **DESIGNATOR** - MBVB

SITE - VENTURA BRIDGE, MISSION BAY, CA

NOMINAL SITE CENTER - 32°46.05'N 117°14.52'W

LOCATED ON NOS CHART # - 18765

SITE ACCESS - This site is located at the Ventura Bridge over Mission Bay in San Diego. From Interstate 5 south in San Diego, take the Sea World Drive exit. Proceed west past Sea World to Ingraham Street. Go north on Ingraham Street and turn left (west) at the first signal onto Dana Landing Road. After Dana Landing Road curves to the left, the boat launch ramp is on the right. Proceed out of the harbor to the left (west) and go to the Ventura Bridge, less than 0.5 miles away.

SITE DESCRIPTION - The Ventura Bridge is supported by paired concrete pillars. The site center is the fourth pair of pillars from the east end of the bridge. Mussels were collected from the seaward sides of the bayward pillar in pairs #3, #4, and #5, counting from the east end of the bridge.

BIVALVE COLLECTIONS

1995 *Mytilus edulis* was collected from this site. Both *M. edulis* and *M. californianus* occur at this site, so care must be taken to collect only *M. edulis*. Collected organisms ranged from approximately 35–60 millimeters in shell length.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

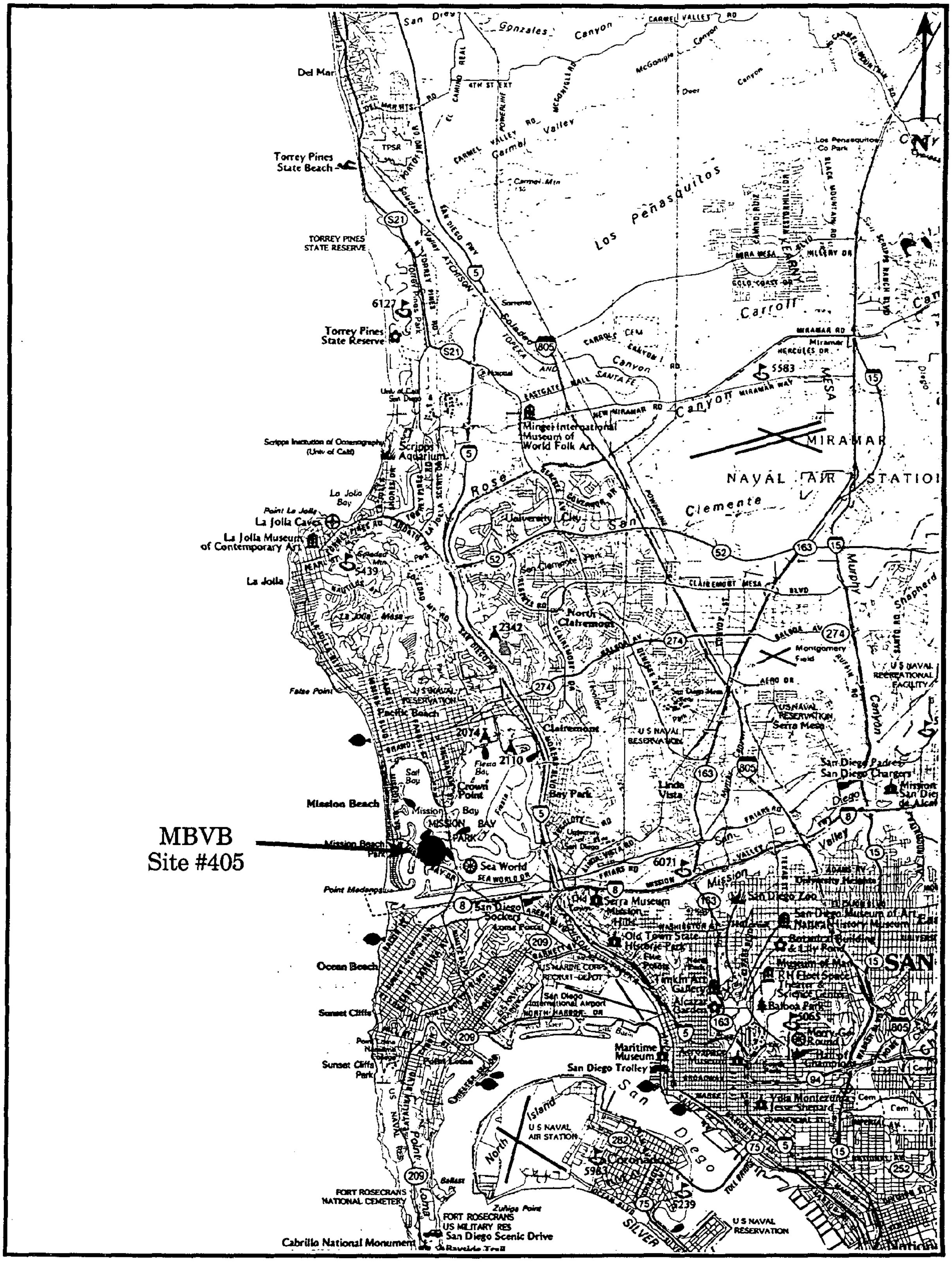
Bivalves - hand
Sediments - NA

WATER DEPTH - +0.75 m MLLW

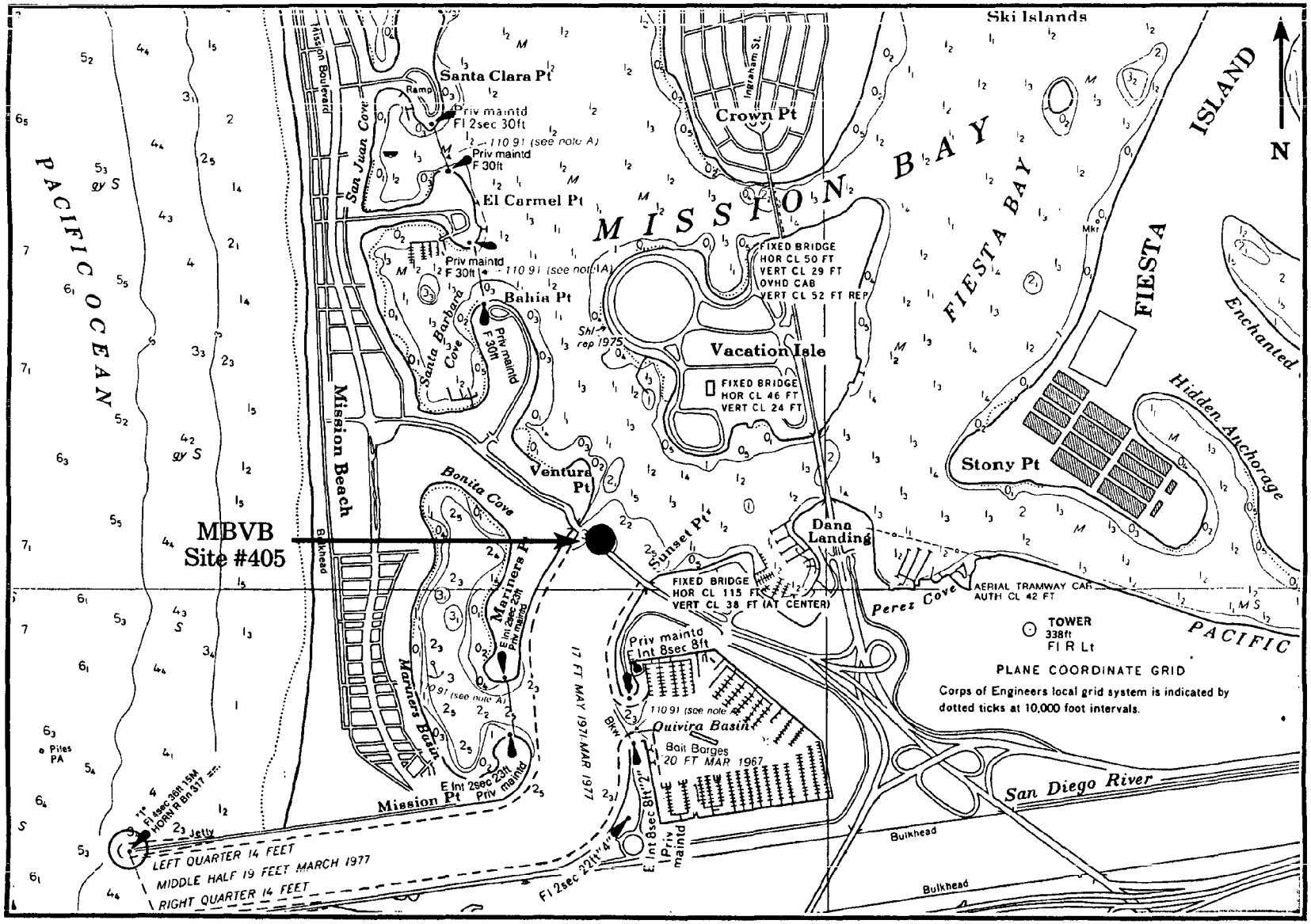
POSSIBLE CONTAMINANTS - Except for recreational boating traffic, no obvious nearby sources of contaminants were observed.

ENVIRONMENTAL DATA

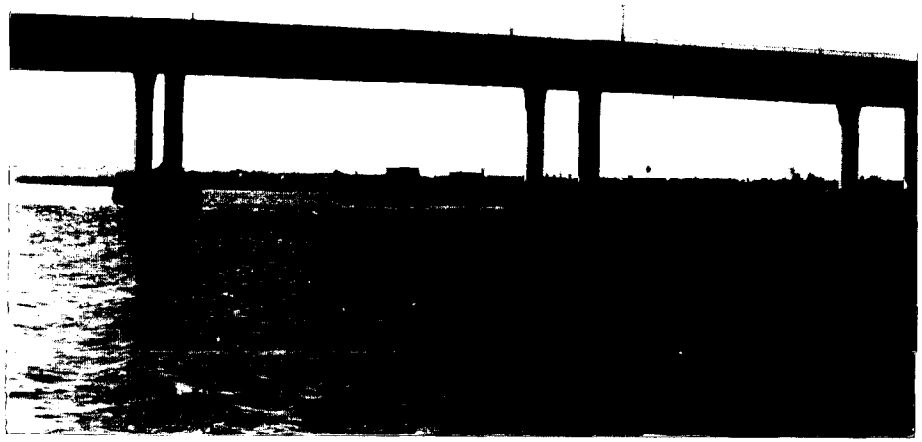
Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	35.0	14.3	15 December 1994



Site #405 (MBVB), Mission Bay Ventura Bridge.



Site #405 (MBVB), Mission Bay Ventura Bridge (from chart 18765).



Site #405 (MBVB), Mission Bay Ventura Bridge.

GERG SITE NUMBER - 406 **DESIGNATOR** - LJLJ

SITE - POINT LA JOLLA, LA JOLLA, CA

NOMINAL SITE CENTER - 32°51.09'N 117°16.43'W

LOCATED ON NOS CHART # - 18765

SITE ACCESS - This site is located on Point La Jolla, in La Jolla. From Interstate 5 in San Diego, take Ardath Road from the south or La Jolla Village Drive from the north and go west to Torrey Pines Road. Turn left onto Torrey Pines Road and proceed to Prospect Street. Turn right onto Prospect Street and proceed to Coast Boulevard. Turn right onto Coast Boulevard and park as near as possible to the water in the vicinity of Ellen B. Scripps Park. At the life guard station near the north end of the park and the south end of La Jolla Cove, check in with the duty life guard, notifying them of the collection (La Jolla Cove is within a Marine Reserve). Go west from the lifeguard station on the walkway along the top of the shoreline and take the stairs down to the rock platform adjacent the western-most rocky point.

SITE DESCRIPTION - The site is approximately 150–200 meters west of the lifeguard station. There is no landmark that distinguishes the site center. The discrete collection stations were spaced approximately 20 meters apart along the upper edge of the mussel beds nearest the tip of Point La Jolla. This site is approximately 0.25 miles west of the target site in La Jolla Cove, which could not be reached due to large swells that broke nearly continuously over the site.

BIVALVE COLLECTIONS

1995 *Mytilus californianus* was plentiful at this site. Collected organisms ranged from approximately 45–70 millimeters in shell length.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

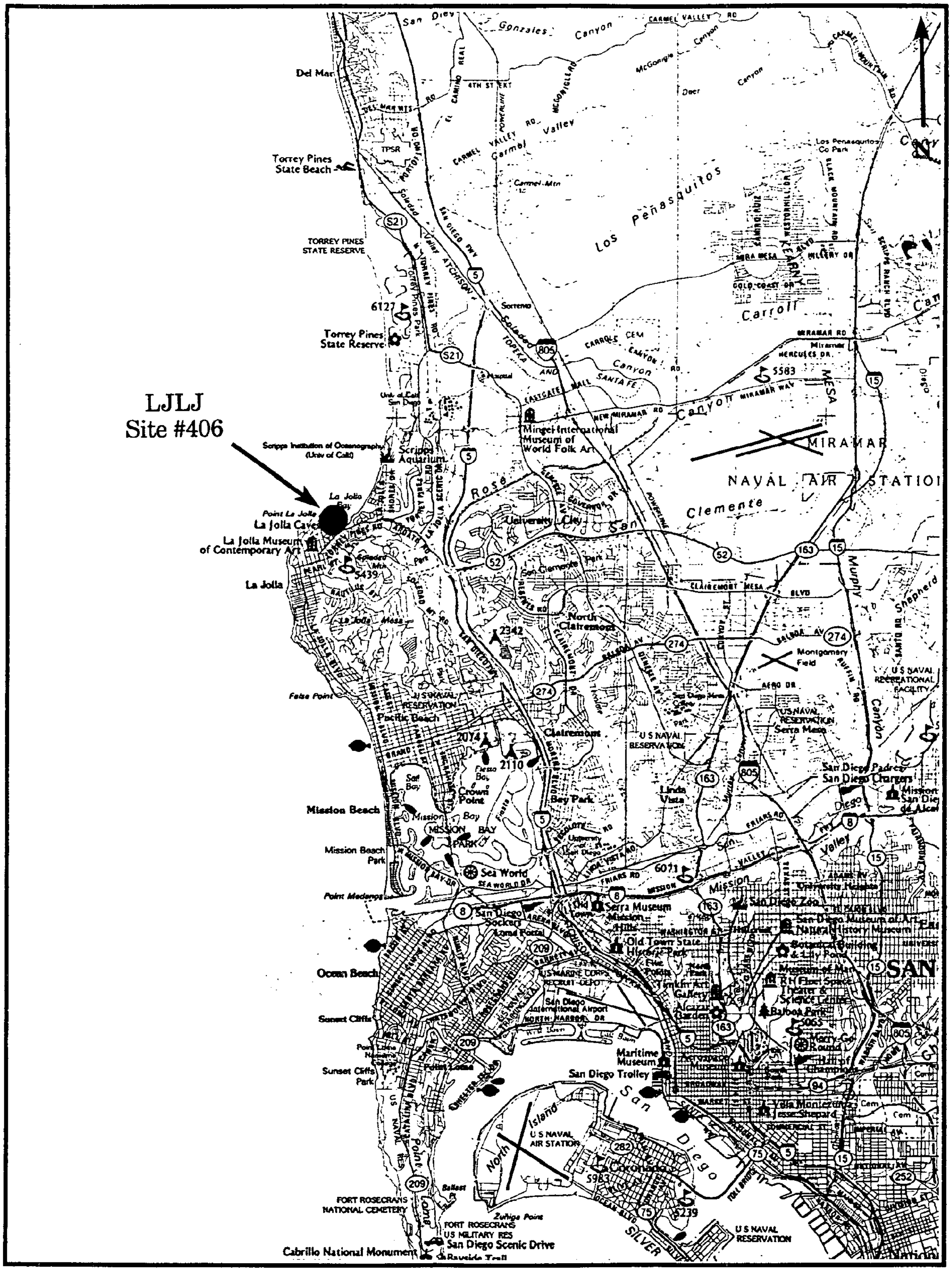
Bivalves - hand
Sediments - NA

WATER DEPTH - +1.0 m MLLW

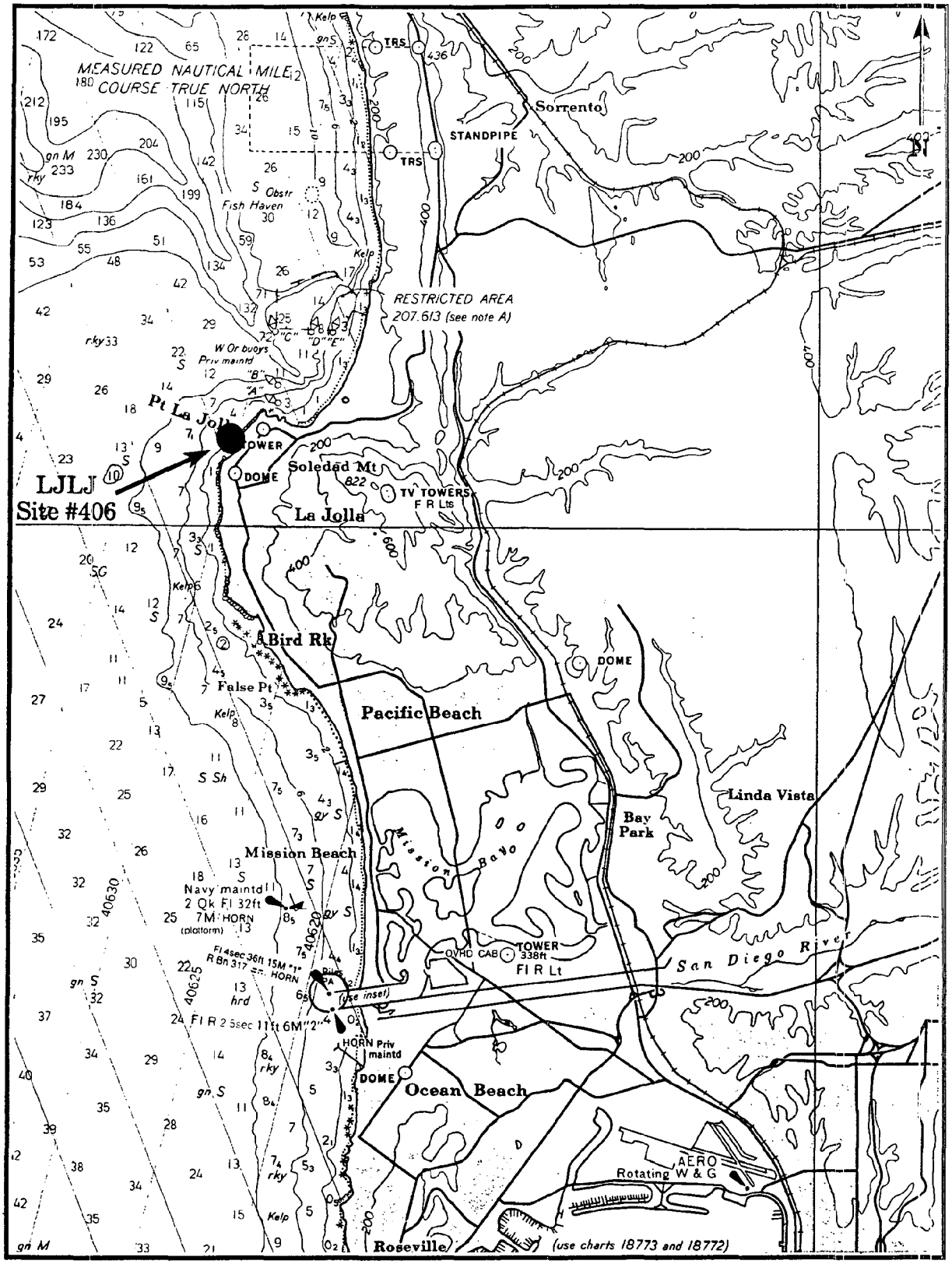
POSSIBLE CONTAMINANTS - No obvious nearby sources of contaminants were observed, although the area is adjacent to an urbanized area.

ENVIRONMENTAL DATA

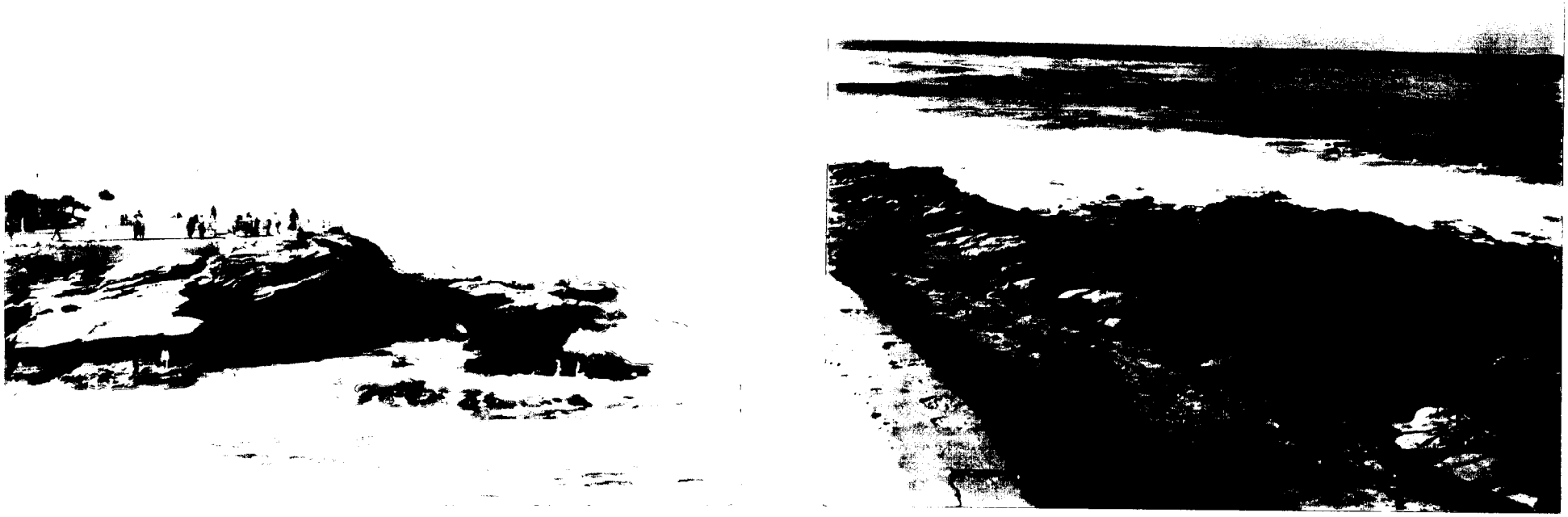
Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	35.0	15.6	13 January 1995



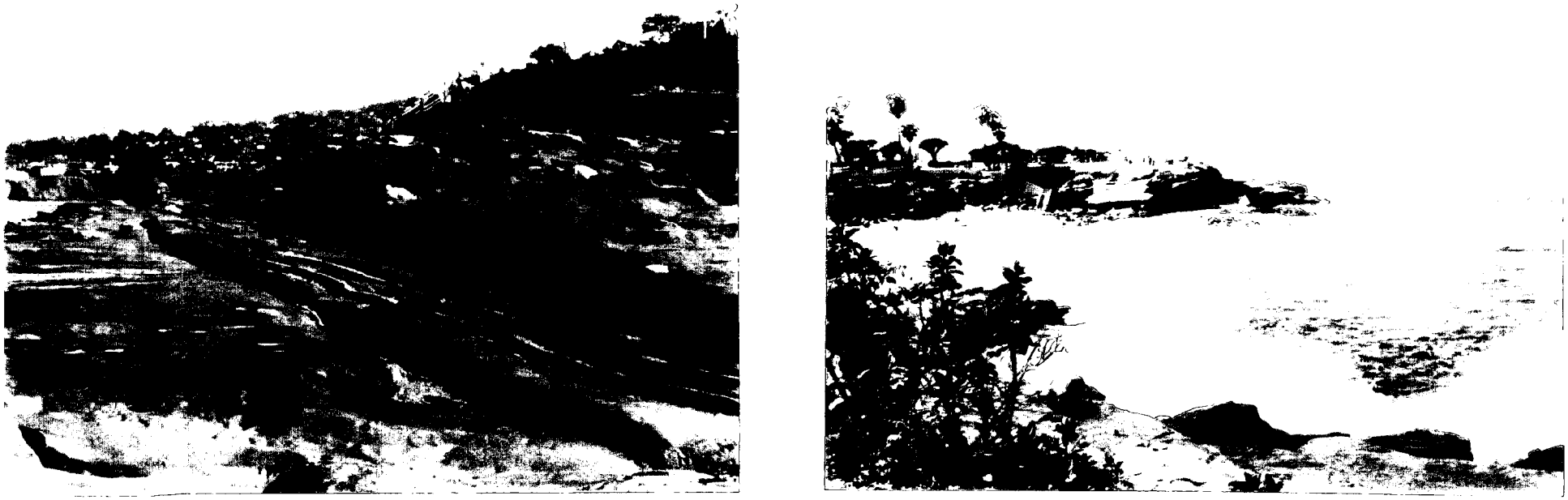
Site #406 (LJLJ), La Jolla Point La Jolla.



Site #406 (LJLJ), La Jolla Point La Jolla (from chart 18765).



Site #406 (LJLJ), La Jolla Point La Jolla.



GERG SITE NUMBER - 407 **DESIGNATOR** - OSBJ

SITE - MUNICIPAL BEACH JETTY, OCEANSIDE, CA

NOMINAL SITE CENTER - 33°12.10'N 117°23.62'W

LOCATED ON NOS CHART # - 18774

SITE ACCESS - This site is located on the jetty at the mouth of the San Luis Rey River in Oceanside. From Interstate 5 just north of Oceanside, take the Oceanside Harbor exit and go west to Harbor Drive. At Harbor Drive, take the left fork to the south. After the road curves to the right (west), park in the parking lot where Pacific Street ends at Harbor Drive. The jetty projects offshore from near the parking lot, adjacent to the mouth of the San Luis Rey River.

SITE DESCRIPTION - The site center is a large boulder next to a peace symbol carved into the concrete matrix atop the jetty, approximately 20 meters from the seaward end of the jetty. Discrete collection stations were approximately 30 meters apart on the north side of the jetty, with the outermost station being directly below the site center.

BIVALVE COLLECTIONS

1995 *Mytilus californianus* was collected from the north side of the jetty, with *Mytilus edulis* also being present on the south side of the jetty. Collected organisms ranged from approximately 45–60 millimeters in shell length.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

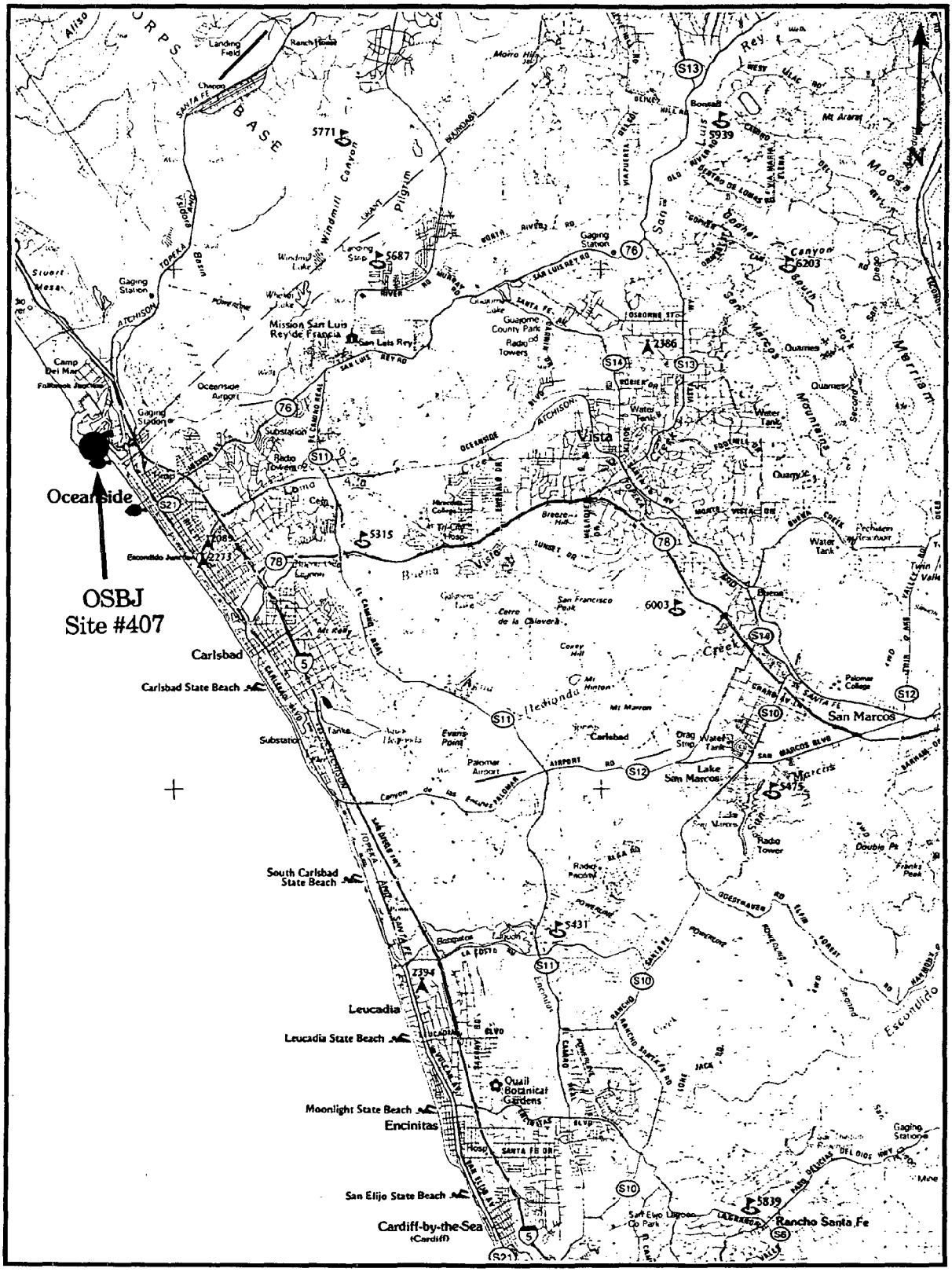
Bivalves - hand
Sediments - NA

WATER DEPTH - +1.0 m MLLW

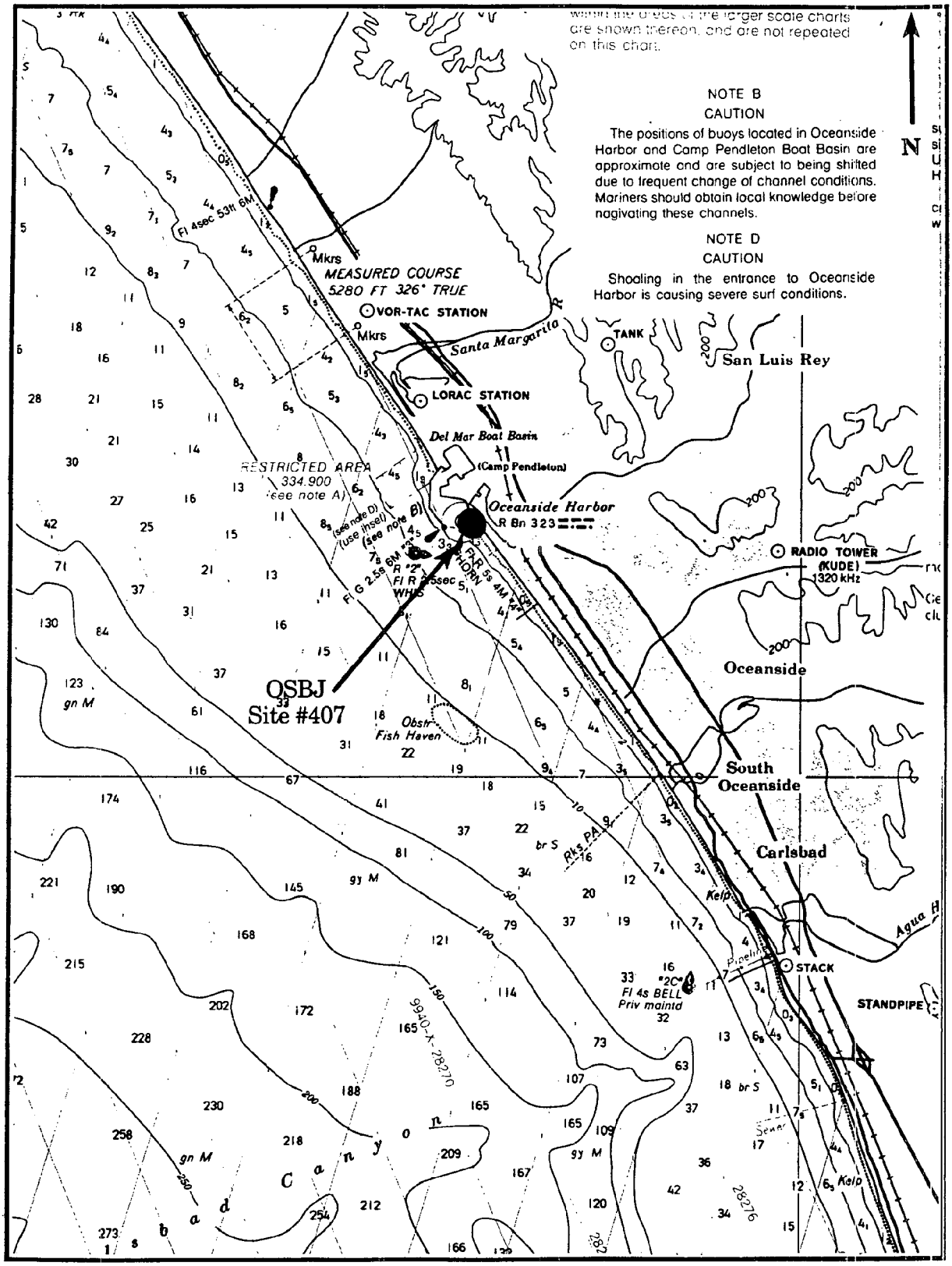
POSSIBLE CONTAMINANTS - Heavy storm run-off from the San Luis Rey River was flowing along the south side of the jetty.

ENVIRONMENTAL DATA

Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	29.0	15.3	11 January 1995

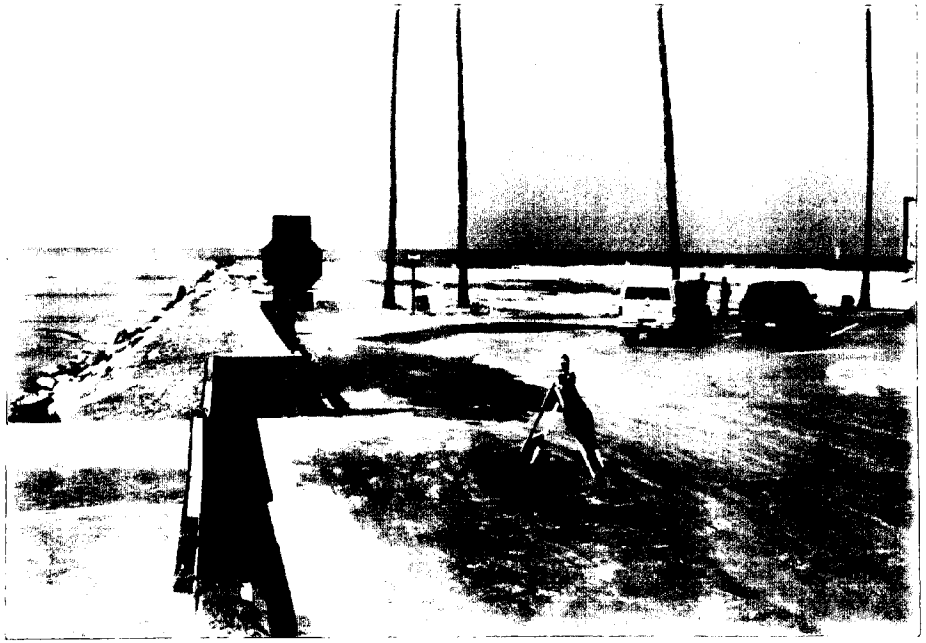


Site #407 (OSBJ), Oceanside Municipal Beach Jetty.



Site #407 (OSBJ), Oceanside Municipal Beach Jetty. (from chart 18774).

Site #407 (OSBJ), Oceanside Municipal Beach Jetty.



GERG SITE NUMBER - 410 **DESIGNATOR** - ABWJ

SITE - WEST JETTY, ANAHEIM BAY, CA

NOMINAL SITE CENTER - 33°44.00'N 118°06.06'W

LOCATED ON NOS CHART # - 18749

SITE ACCESS - The site is on a jetty adjacent to Anaheim Bay in Seal Beach. From Interstate 405 just south of its intersection with Interstate 605, take the Seal Beach Boulevard exit. Turn left (west) onto Seal Beach Boulevard. Just past the stop sign at Electric Avenue, turn left (southwest) onto Neptune Street. Park the car on Neptune Street and walk across the beach to the chain-link fence that runs out to the jetty. Walk around the end of the fence onto the jetty that projects southward from the beach.

SITE DESCRIPTION - The site center is a large round timber wedged into the boulders of the jetty, and whose top projects barely above the boulders. The site center is approximately 75 meters from the end of the chain-link fence. The three discrete sampling stations were on the west side of the jetty, approximately 25 meters apart. The outer-most station was immediately below a second round timber wedged into the jetty. This site is very exposed and would be hazardous in heavy seas.

BIVALVE COLLECTIONS

1995 *Mytilus californianus* was abundant on the jetty boulders. Collected organisms ranged from approximately 50–80 millimeters in shell length.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

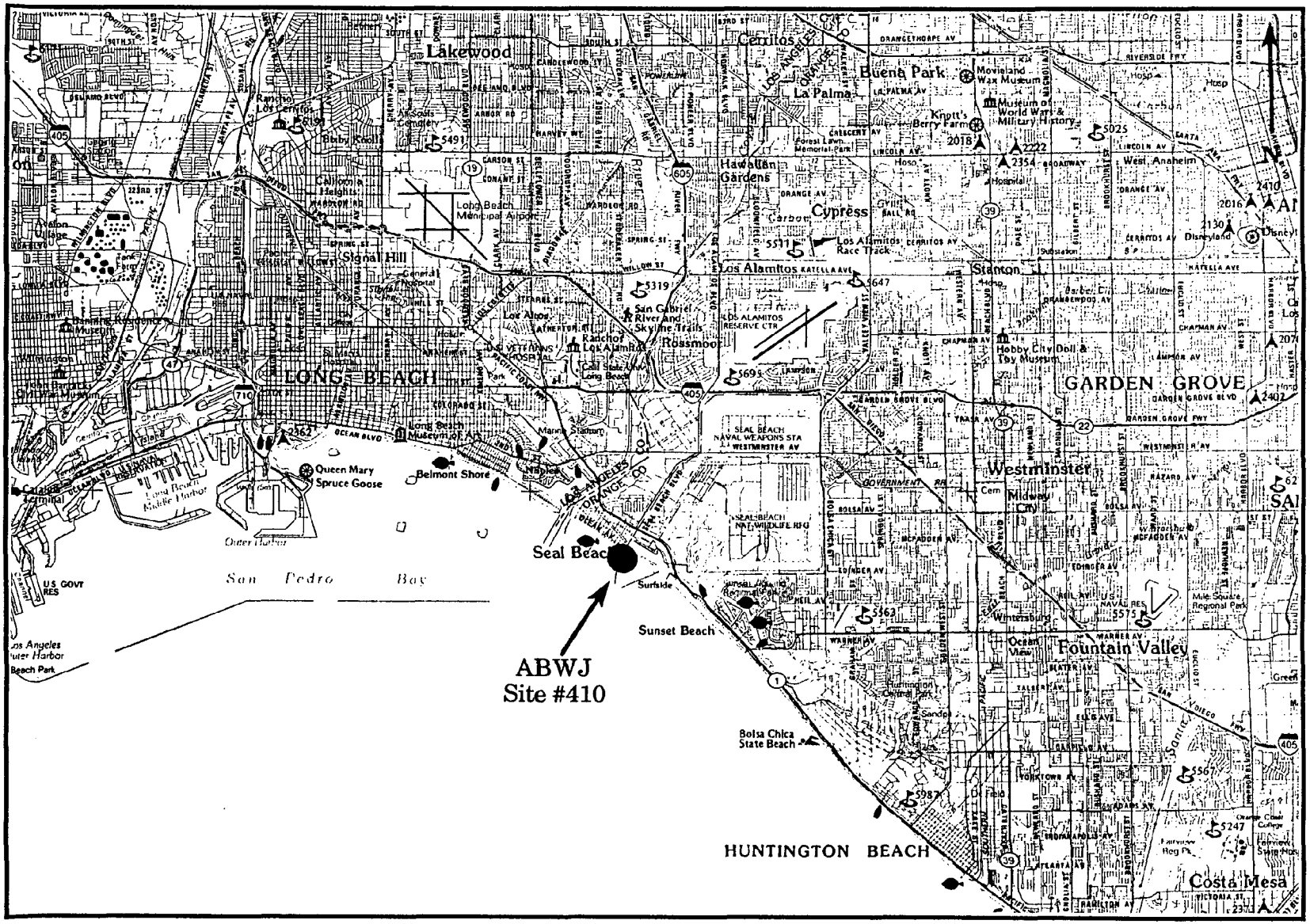
Bivalves - hand
Sediments - NA

WATER DEPTH - +0.75 m MLLW

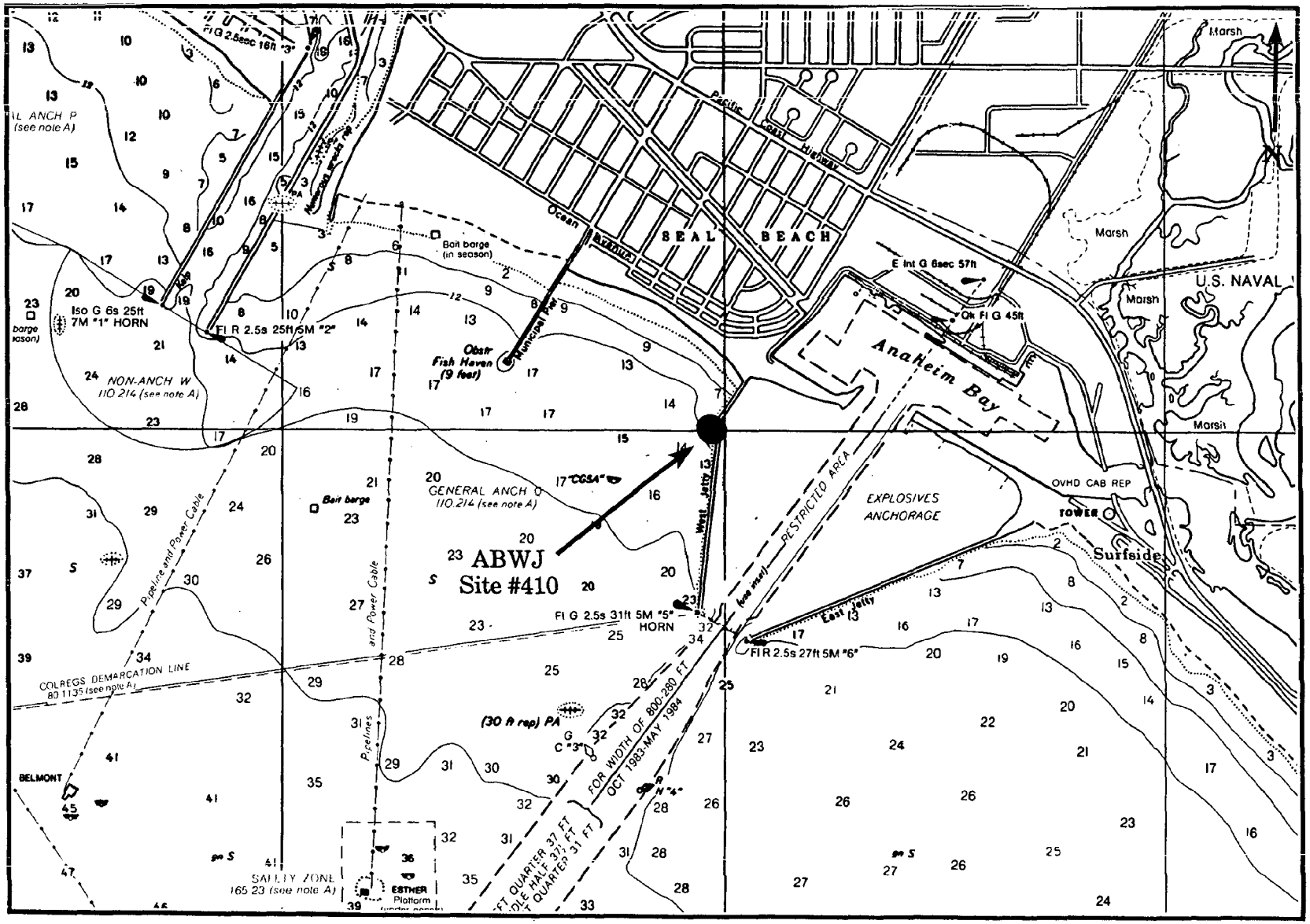
POSSIBLE CONTAMINANTS - This site is adjacent to a U.S. Navy weapons station.

ENVIRONMENTAL DATA

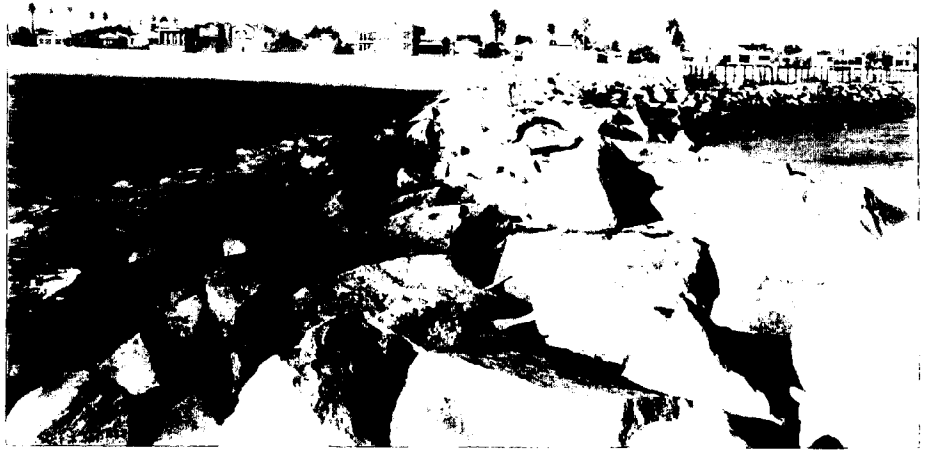
Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	32.5	16.6	16 December 1994



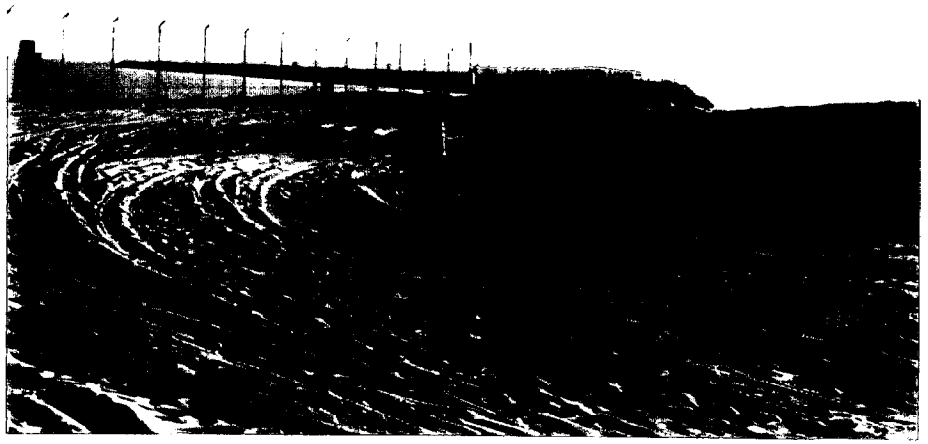
Site #410 (ABWJ), Anaheim Bay West Jetty.



Site #410 (ABWJ), Anaheim Bay West Jetty (from chart 18749).



Site #410 (ABWJ), Anaheim Bay West Jetty.



GERG SITE NUMBER - 413 **DESIGNATOR** - PVRP

SITE - ROYAL PALMS STATE PARK, PALOS VERDES, CA

NOMINAL SITE CENTER - 33°43.02'N 118°19.37'W

LOCATED ON NOS CHART # - 18746

SITE ACCESS - This site is located at Royal Palms State Park on the Palos Verdes peninsula. From Interstate 110 south in San Pedro, take the Gaffey Street exit south approximately 2.5 miles to Paseo Del Mar. Turn right (west) and proceed to the park entrance (approximately 1.5 miles) just before the intersection of Western Avenue. Drive down the park entrance road and park near the life guard tower. The site is on a large rock outcrop directly offshore from the life guard tower and is accessible across the beach at low tide.

SITE DESCRIPTION - The site center is the highest rock peak on the outcrop. Discrete collection stations were on the northwest side of the outcrop. The middle station was directly below the site center and the other two stations were 15 meters inshore and offshore on the northwest side of the outcrop. This site is very exposed and would be hazardous in heavy seas. Moreover, the rock outcrop is an island at all but the lowest tides.

BIVALVE COLLECTIONS

1995 *Mytilus californianus* occurred in large patches just above the brown algal zone. Collected organisms ranged from approximately 40–70 millimeters in shell length.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

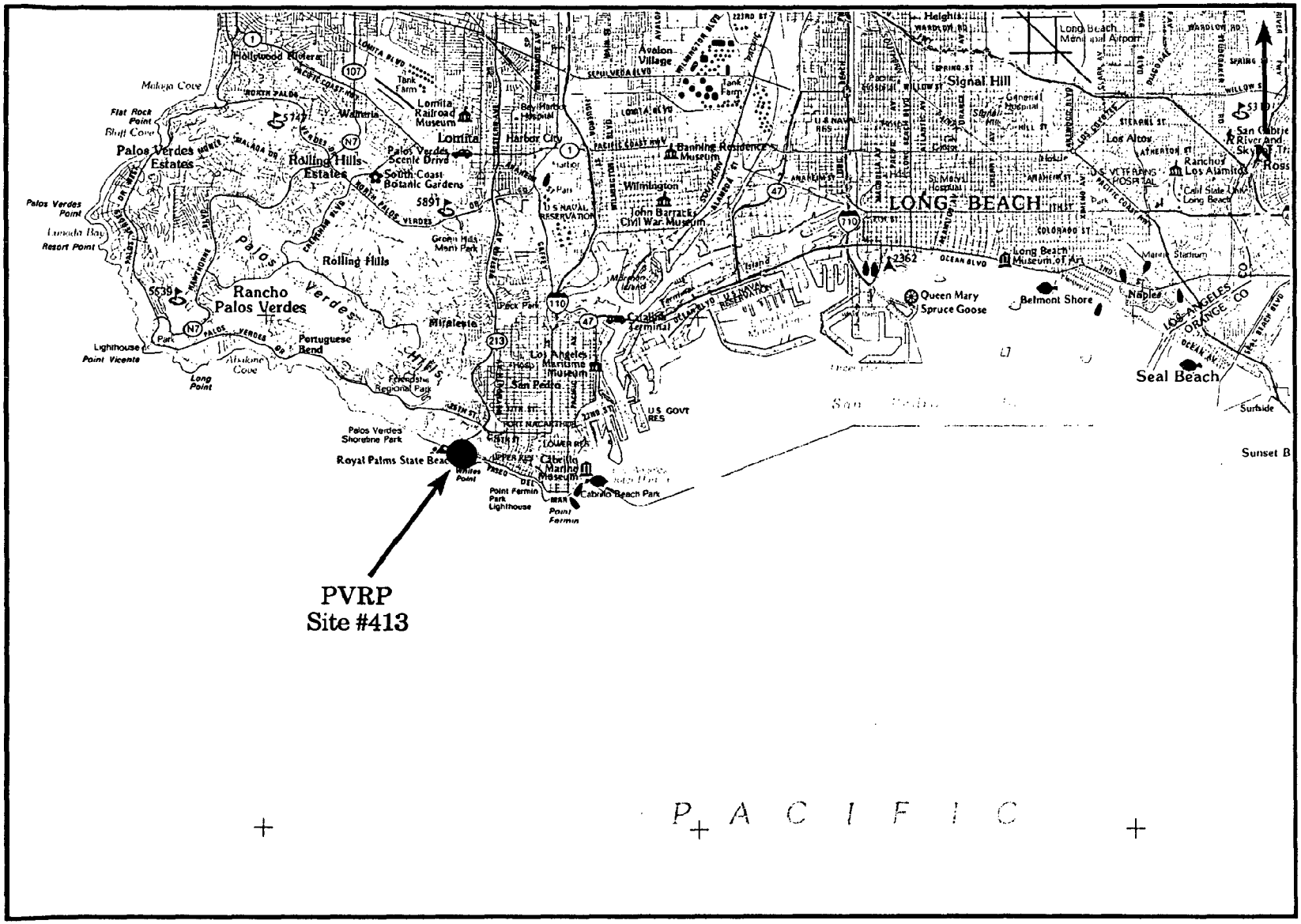
Bivalves - hand
Sediments - NA

WATER DEPTH - +0.75 m MLLW

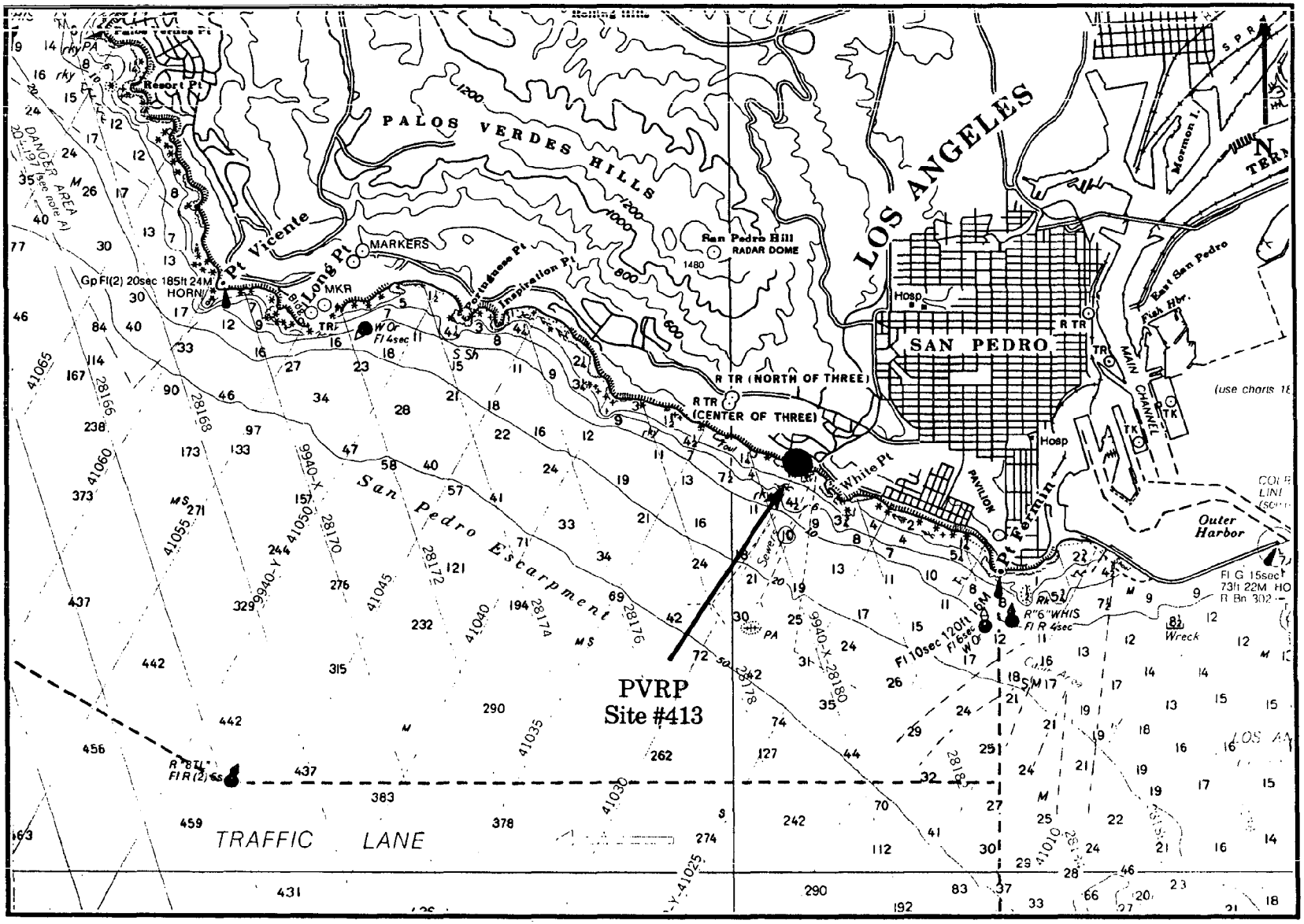
POSSIBLE CONTAMINANTS - No obvious nearby sources of contaminants were observed, although Los Angeles Harbor is approximately 3 miles south of the site.

ENVIRONMENTAL DATA

Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	24.0	16.0	17 December 1994



Site #413 (PVRP), Palos Verdes Royal Palms State Park.



Site #413 (PVRP), Palos Verdes Royal Palms State Park (from chart 18746).

Site #413 (PVRP), Palos Verdes Royal Palms State Park.

GERG SITE NUMBER - 415 **DESIGNATOR** - MDSJ

SITE - SOUTH JETTY, MARINA DEL REY, CA

NOMINAL SITE CENTER - 33°57.69'N 118°27.50'W

LOCATED ON NOS CHART # - 18744

SITE ACCESS - This site is located on the south jetty at the mouth of Marina Del Rey harbor. From Interstate 405 in Los Angeles, take the Marina Freeway (Highway 90) west. When the freeway ends, turn left onto Culver at the first signal and proceed approximately 2 miles to Pacific Street. Turn right onto Pacific Street and proceed until the road ends at the pedestrian bridge spanning Ballona Creek, adjacent to 62nd Avenue. Park and cross the bridge to the south jetty.

SITE DESCRIPTION - The site center is the end of the paved path toward the west (seaward) end of the jetty. The middle discrete collection station was directly below the end of the path on the south side of the jetty. The other two stations were approximately 7 meters east and west of the middle station, also on the south side of the jetty.

BIVALVE COLLECTIONS

1995 *Mytilus edulis* was abundant but fairly small at this site. *Mytilus californianus* was also present, so care was necessary to collect only the target species. Collected organisms ranged from approximately 35–50 millimeters in shell length.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

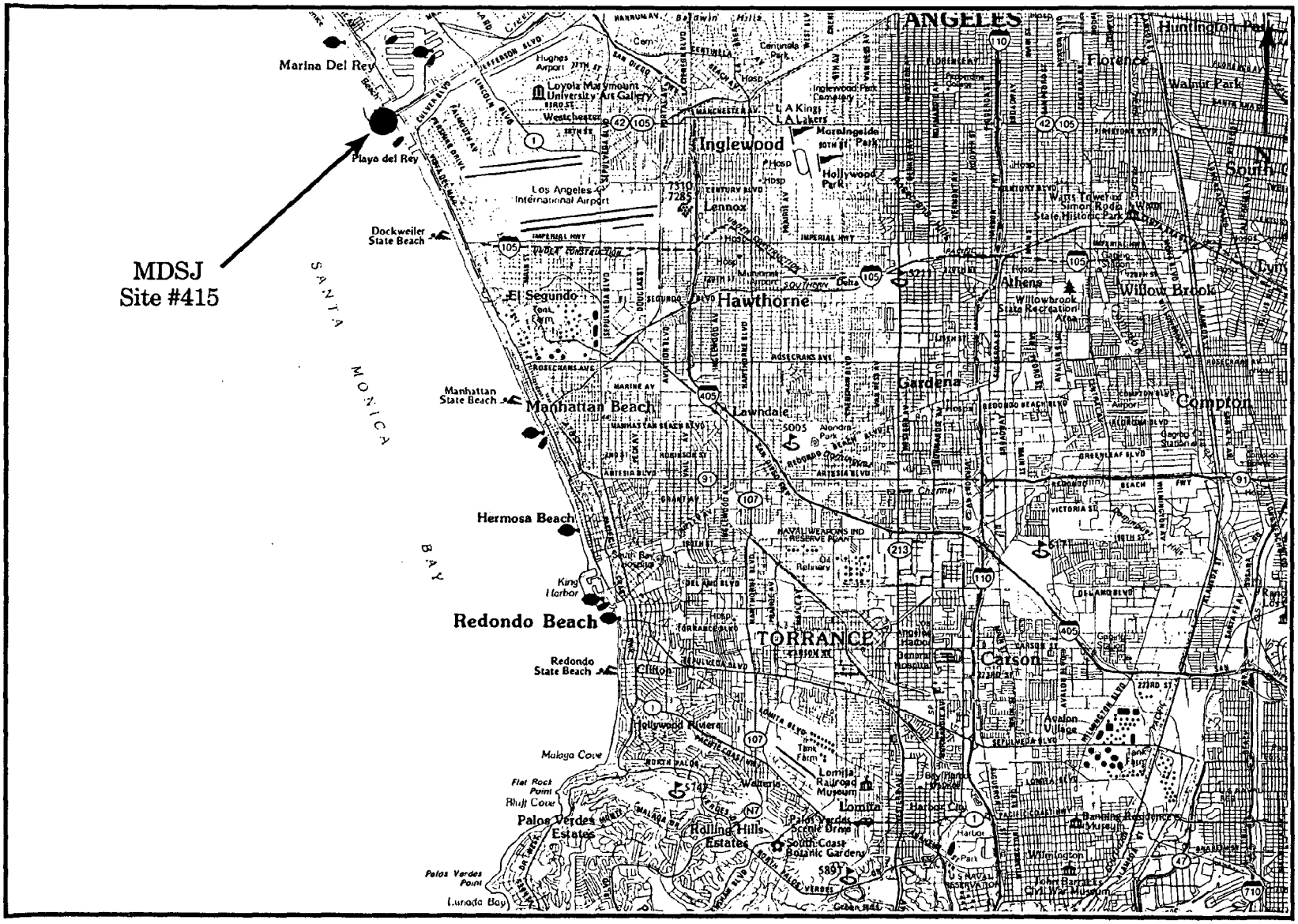
Bivalves - hand
Sediments -

WATER DEPTH - +0.5 m MLLW

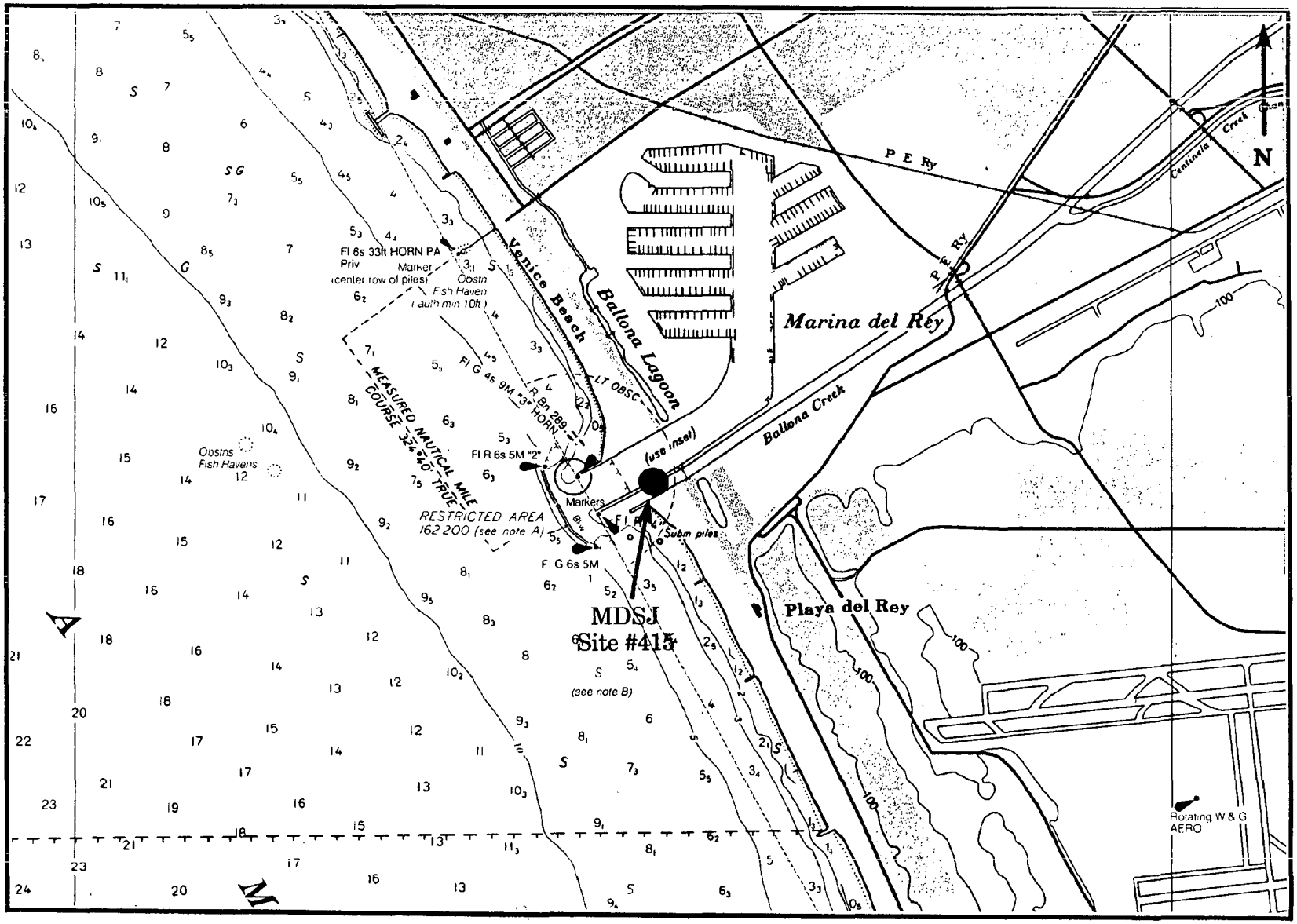
POSSIBLE CONTAMINANTS - Ballona Creek empties to the ocean directly adjacent to this site and may contain substantial street runoff during rain storms. Also, Marina Del Rey is the world's largest man-made small-craft harbor, with over 6,000 boats berthed there. Under certain meteorological conditions, this area also receives particulate fallout from aircraft departing and arriving at Los Angeles International Airport.

ENVIRONMENTAL DATA

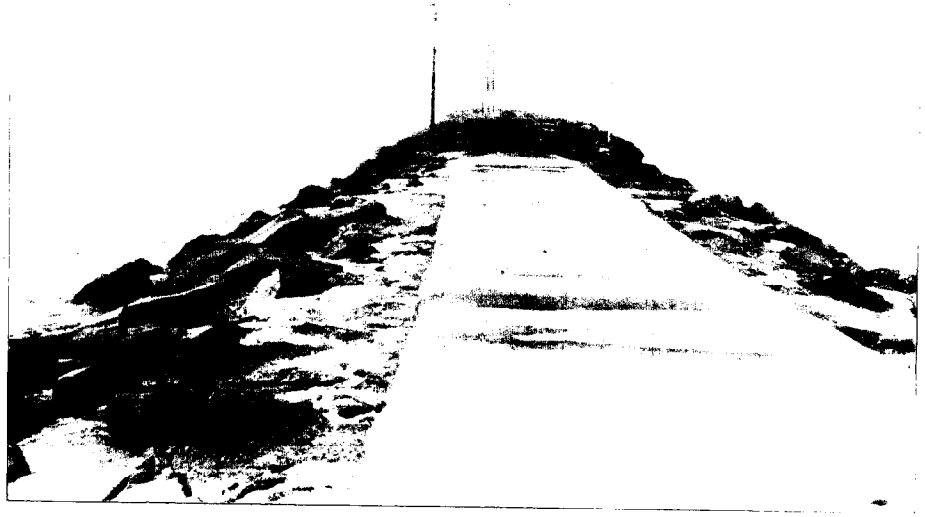
Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	25.0	16.1	18 December 1994



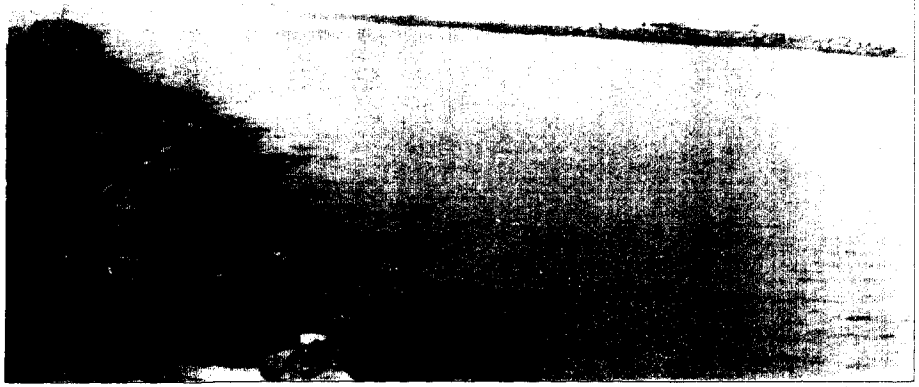
Site #415 (MDSJ), Marina Del Rey South Jetty.



Site #415 (MDSJ), Marina Del Rey South Jetty (from chart 18744).



Site #415 (MDSJ), Marina Del Rey South Jetty.



GERG SITE NUMBER - 417 **DESIGNATOR** - PDPD

SITE - POINT DUME, POINT DUME, CA

NOMINAL SITE CENTER - 34°00.10'N 118°48.52'W

LOCATED ON NOS CHART # - 18744

SITE ACCESS - This site is located on Point Dume, near Malibu. From Highway 1 (Pacific Coast Highway) north of Malibu, take Westward Beach Road to Zuma Beach. Proceed to the last parking area at the end of the road. The site is below the sheer cliff at the south end of the beach.

SITE DESCRIPTION - The site center is a 1-foot steel pipe projecting vertically from a rock at the base of the cliff above a pile of large boulders that extended down to the water. The middle station was directly below the site center in the splash zone. The other two discrete collection stations were approximately 15 meters north and south of the middle station. This is a rugged, exposed site that should be sampled with great caution. Minus tides will be required for collections made during periods of large swells.

BIVALVE COLLECTIONS

1995 *Mytilus californianus* was fairly plentiful at this site, and occurred in a range of sizes. Collected organisms ranged from approximately 40–70 millimeters in shell length.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

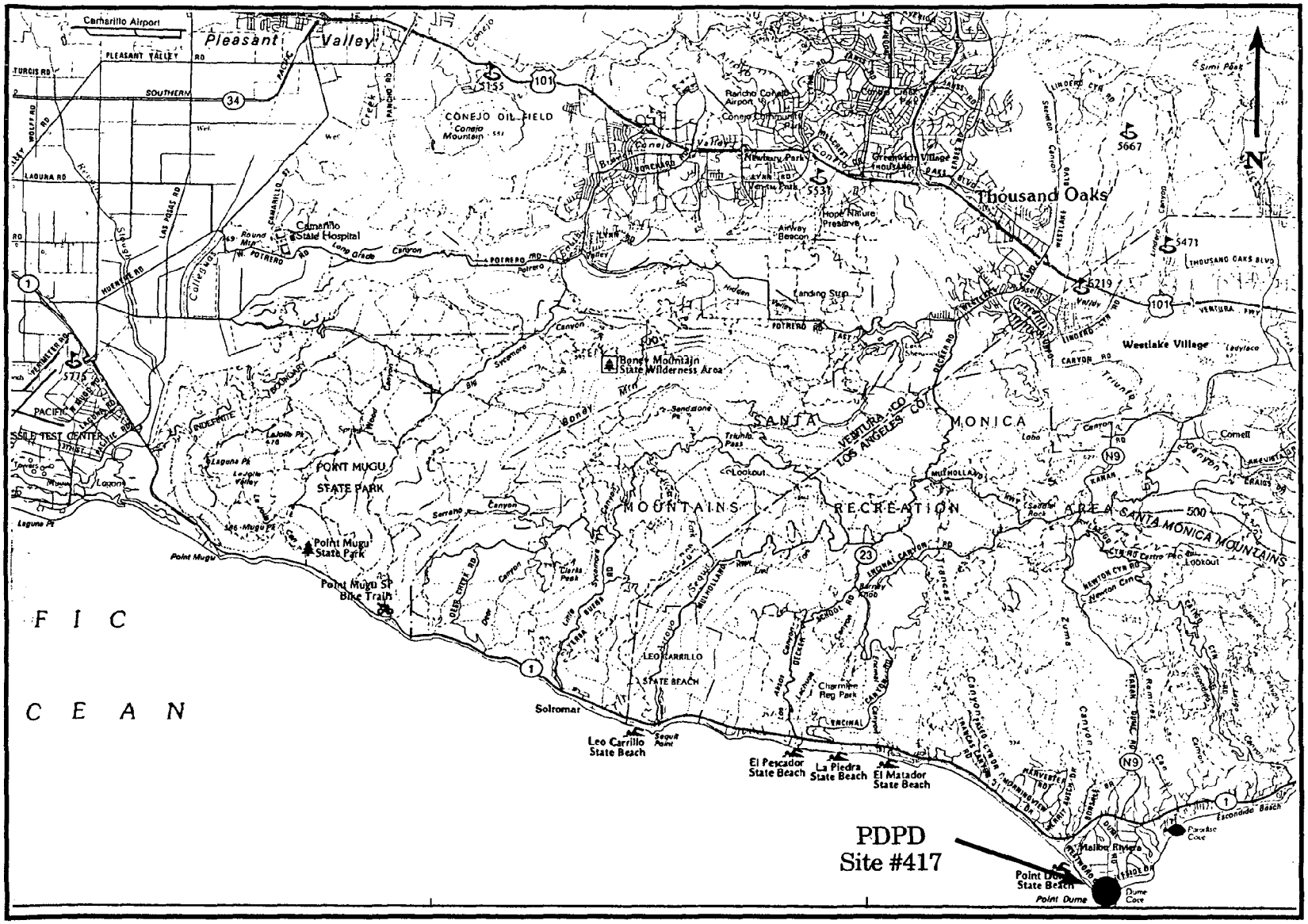
Bivalves - hand
Sediments - NA

WATER DEPTH - +1.0 m MLLW

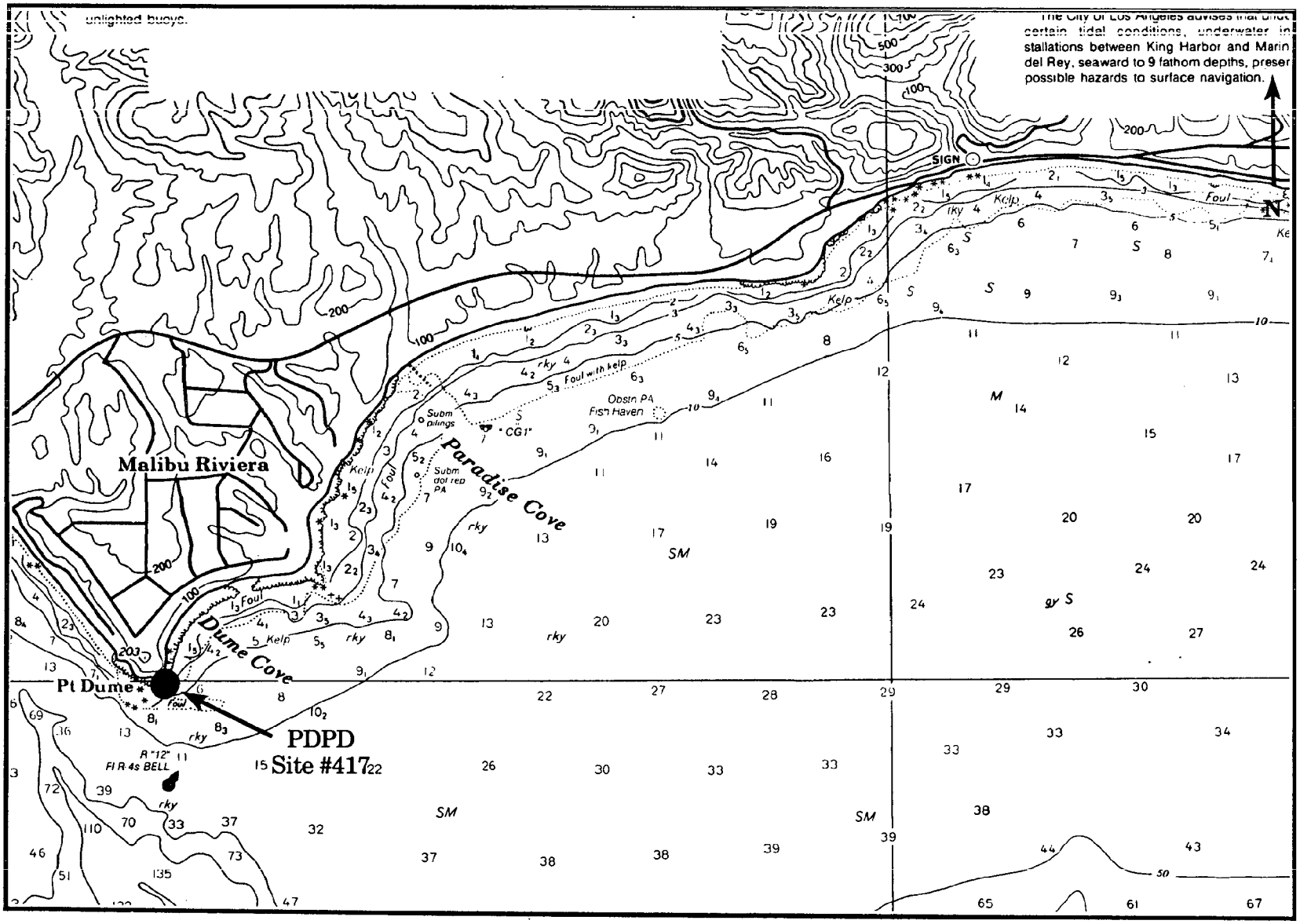
POSSIBLE CONTAMINANTS - No obvious nearby sources of contaminants were observed.

ENVIRONMENTAL DATA

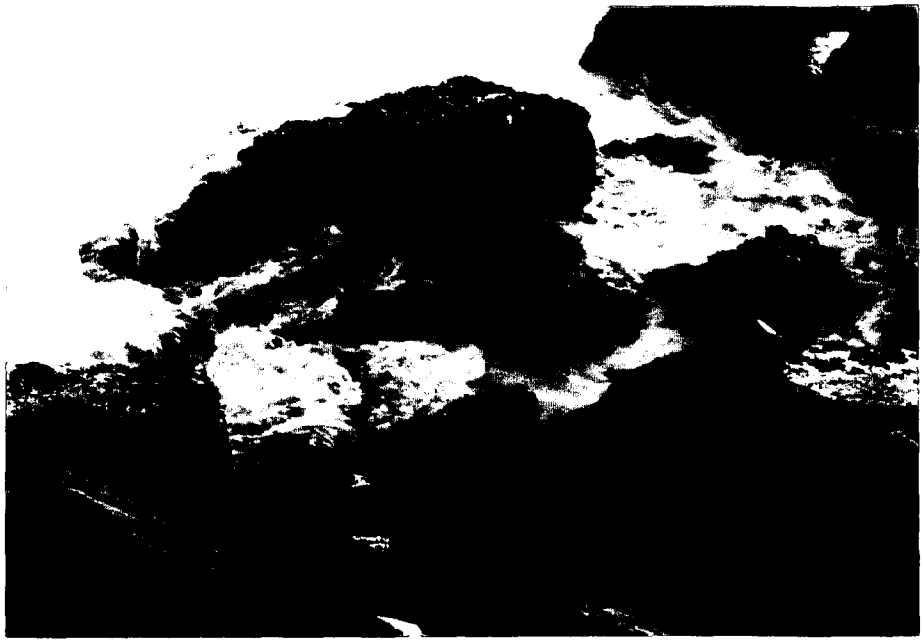
Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	30.0	15.9	19 December 1994



Site #417 (PDPD), Point Dume Point Dume.



Site #417 (PDPD), Point Dume Point Dume (from chart 18744).



Site #417 (PDPD), Point Dume Point Dume.

GERG SITE NUMBER - 422 **DESIGNATOR** - SLSL

SITE - POINT SAN LUIS, SAN LUIS OBISPO, CA

NOMINAL SITE CENTER - 35°09.63'N 120°45.35'W

LOCATED ON NOS CHART # - 18704

SITE ACCESS - From Highway 101 between San Luis Obispo and Pismo Beach, take the Avila Beach exit west. Proceed past Avila Beach and the entrance to the Diablo Canyon nuclear power plant to the last parking lot near the base of the Port San Luis wharf. Park and walk west over the boulders and small sandy beaches at the base of the cliffs to the base of the breakwater. This is an approximately 20-minute walk.

SITE DESCRIPTION - The site center is the concrete slab atop the large rock on the west end of the sand beach adjacent to the landward end of the breakwater. Discrete collection stations were the middle and end remnants of concrete pilings just seaward of the large rock with the concrete slab atop it. This site requires a tide of 0.0 meters or lower to allow safe passage along the base of the cliffs.

BIVALVE COLLECTIONS

1995 *Mytilus californianus* was plentiful in a range of sizes. Collected organisms ranged from approximately 45–70 millimeters in shell length.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

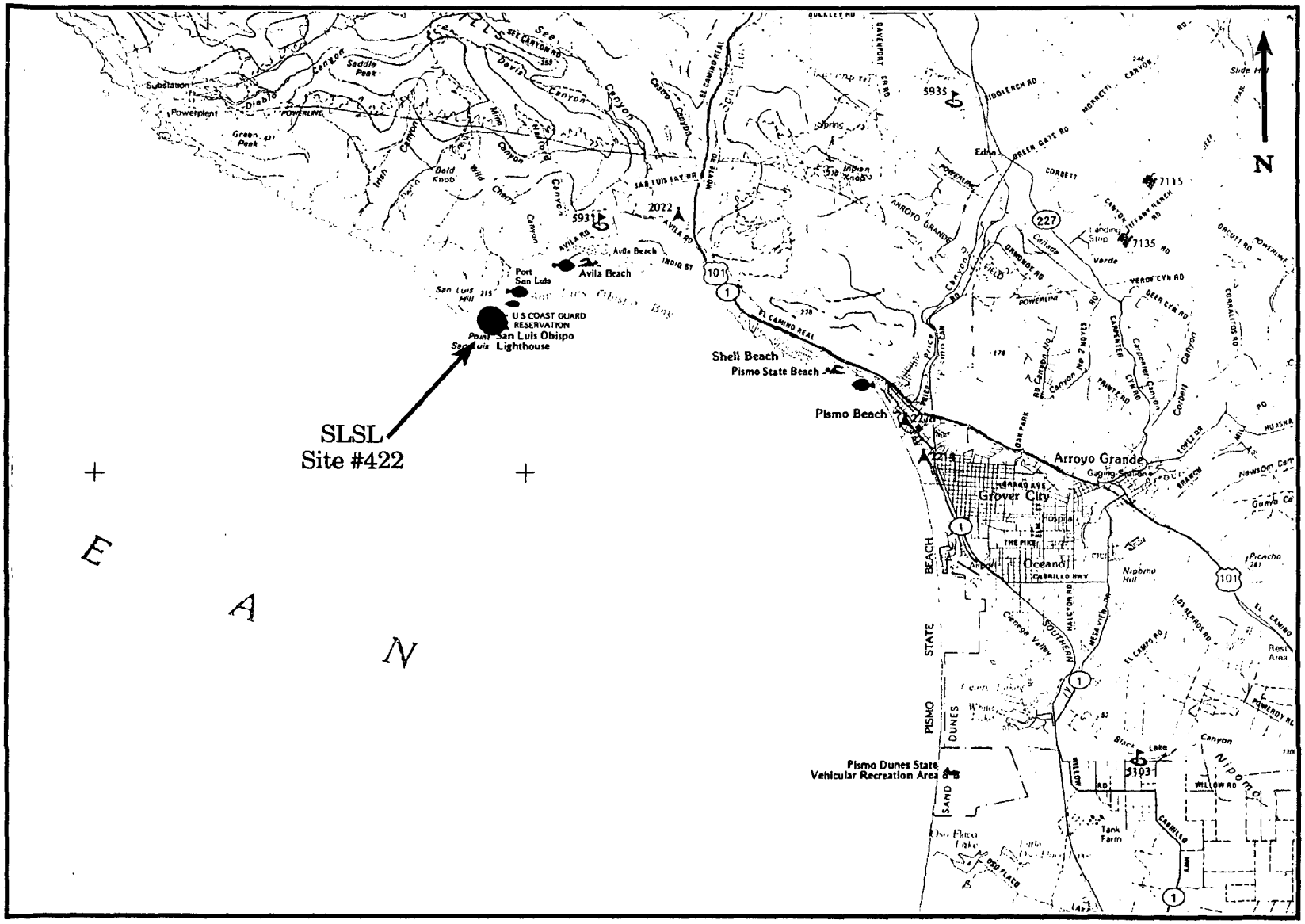
Bivalves - hand
Sediments - NA

WATER DEPTH - +0.5 m MLLW

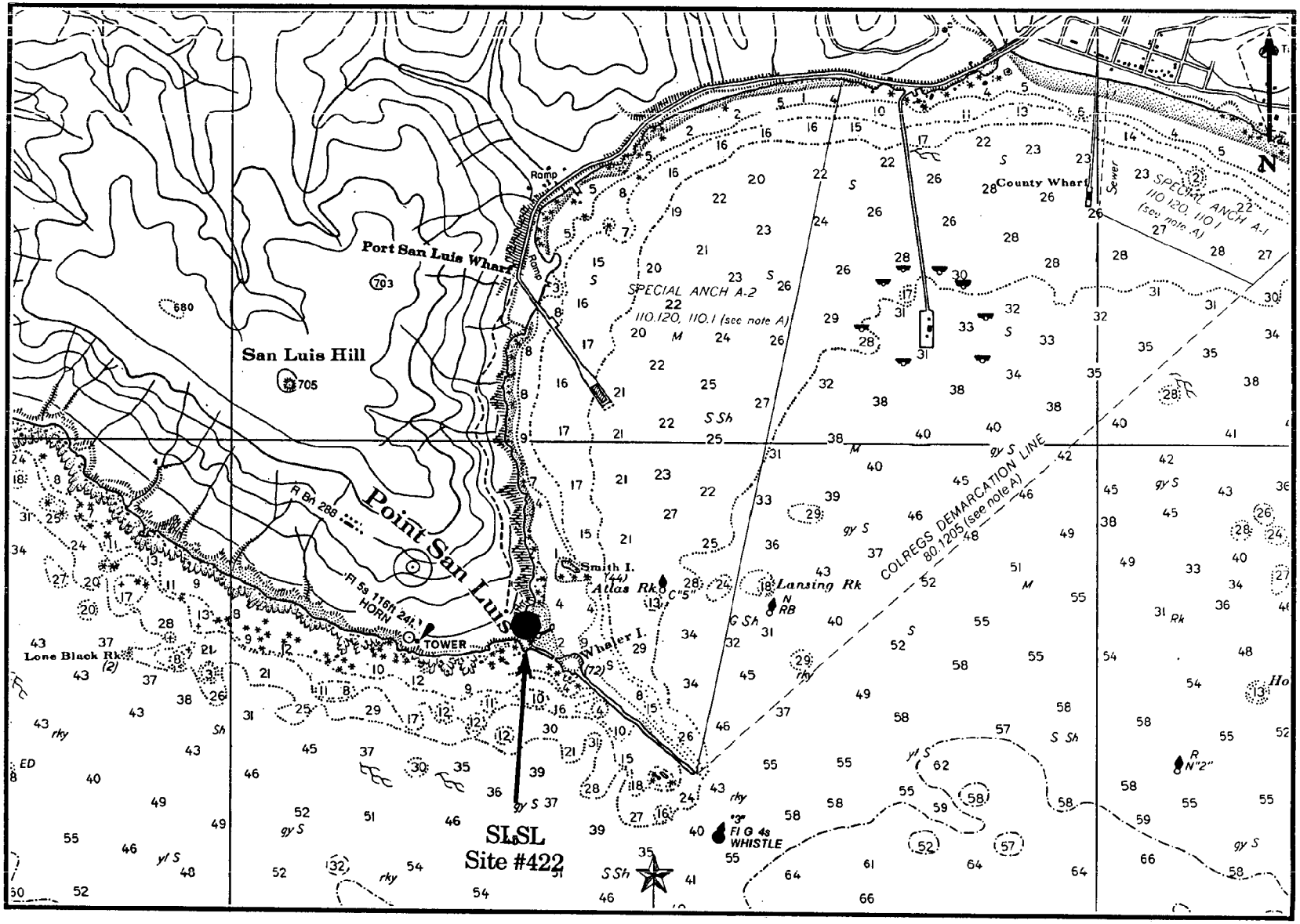
POSSIBLE CONTAMINANTS - No obvious nearby sources of contaminants were observed, although a fairly large commercial fishing fleet is usually moored directly offshore of the site and a small oil spill occurred in the bay during 1994, approximately 1.5 miles east of the site.

ENVIRONMENTAL DATA

Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	29.0	12.3	20 December 1994

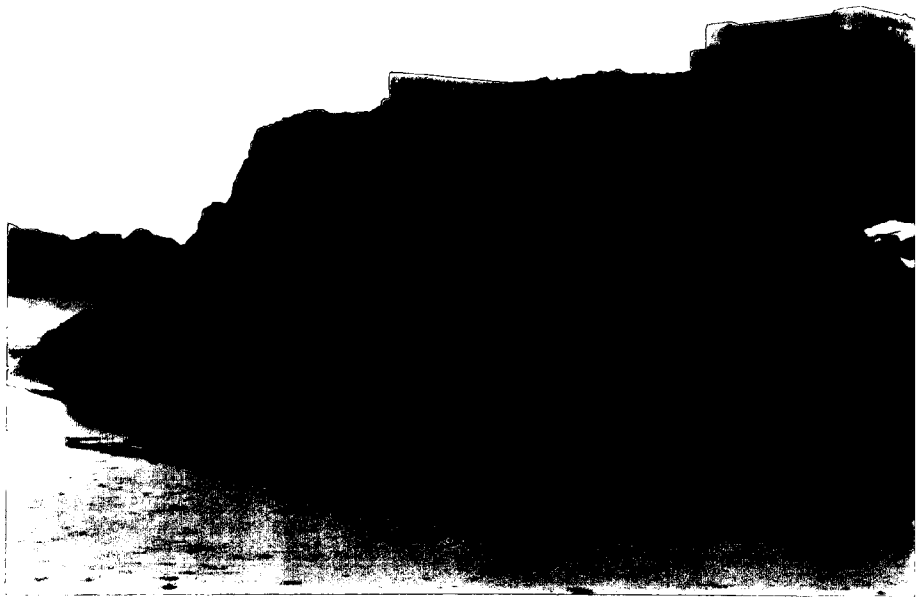


Site #422 (SLSL), San Luis Obispo Point San Luis.



Site #422 (SLSL), San Luis Obispo Point San Luis (from chart 18704).

Site #422 (SLSL), San Luis Obispo Point San Luis.



GERG SITE NUMBER - 424 **DESIGNATOR** - PGLP

SITE - LOVERS POINT, PACIFIC GROVE, CA

NOMINAL SITE CENTER - 36°37.63'N 121°54.99'W

LOCATED ON NOS CHART # - 18685

SITE ACCESS - This site is located on Lovers Point in Pacific Grove. From Highway 1 south near Seaside, take the Pacific Grove exit onto Del Monte Avenue. After approximately 1.6 miles, angle right onto Lighthouse Avenue and go through the tunnel. Approximately 1 mile past the tunnel, turn right toward the ocean onto David Avenue. Turn left onto Oceanview Boulevard and proceed to Lovers Point, approximately 1 mile. Park along the seawall in front of the restaurant, just to the west of Lovers Point Park. Walk through the park to the rocky point at its seaward end.

SITE DESCRIPTION - The site center is a USGS survey monument in the center of the highest rocks on the point, near a cylindrical hole in a concrete casting set in the rocks. The discrete collection stations were along a channel that runs northwest-southeast through the rocks at the shore, approximately 15 meters northeast of the site center. Discrete stations were 10–15 meters apart, distributed from the west end to the east end of the channel. This site would be dangerous to sample when swells are large, because the channel would funnel breaking waves across all the collection stations.

BIVALVE COLLECTIONS

1995 *Mytilus californianus* was plentiful, but somewhat small. Collected organisms ranged from approximately 40–60 millimeters in shell length.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

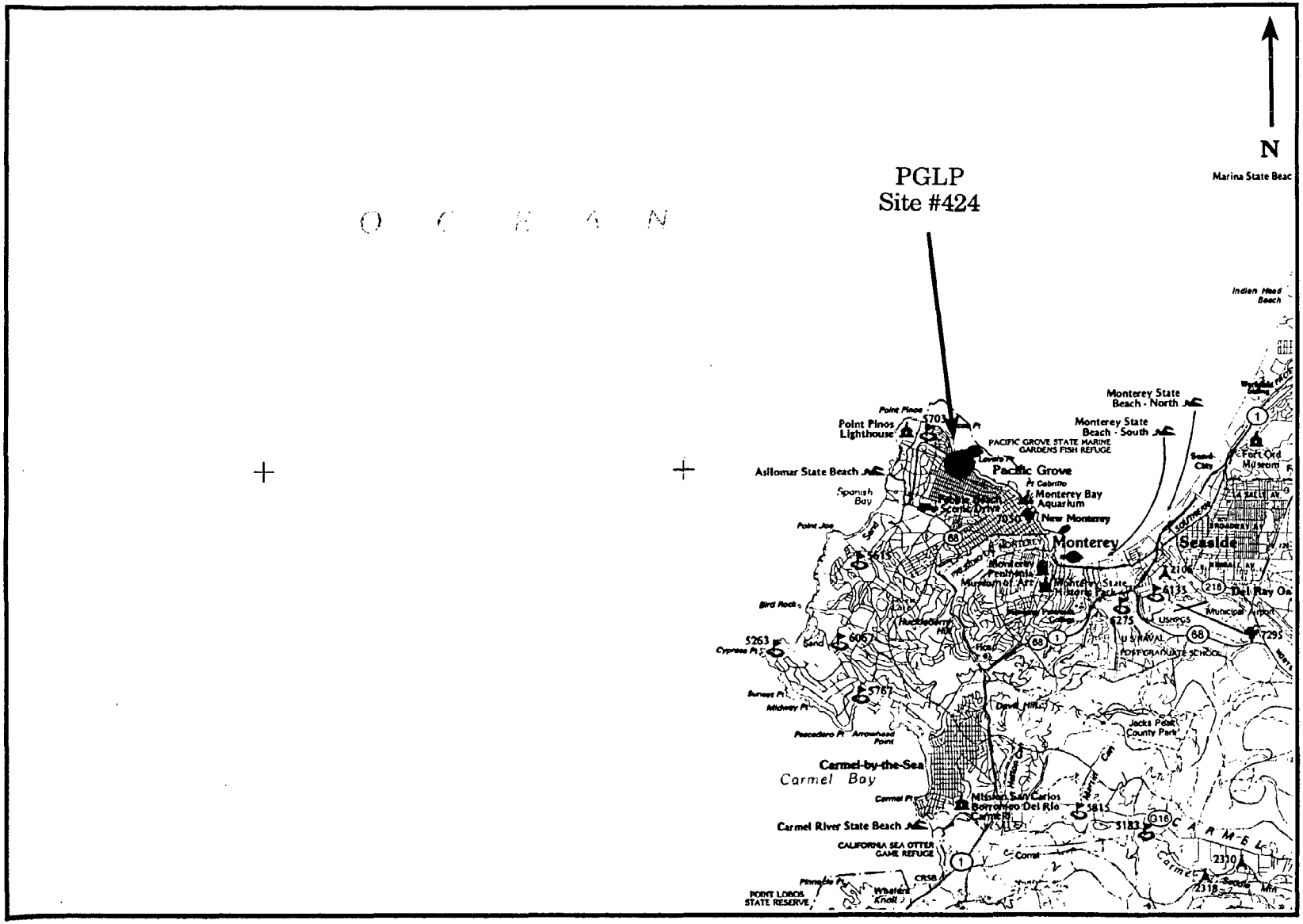
Bivalves - hand
Sediments - NA

WATER DEPTH - +1.0 m MLLW

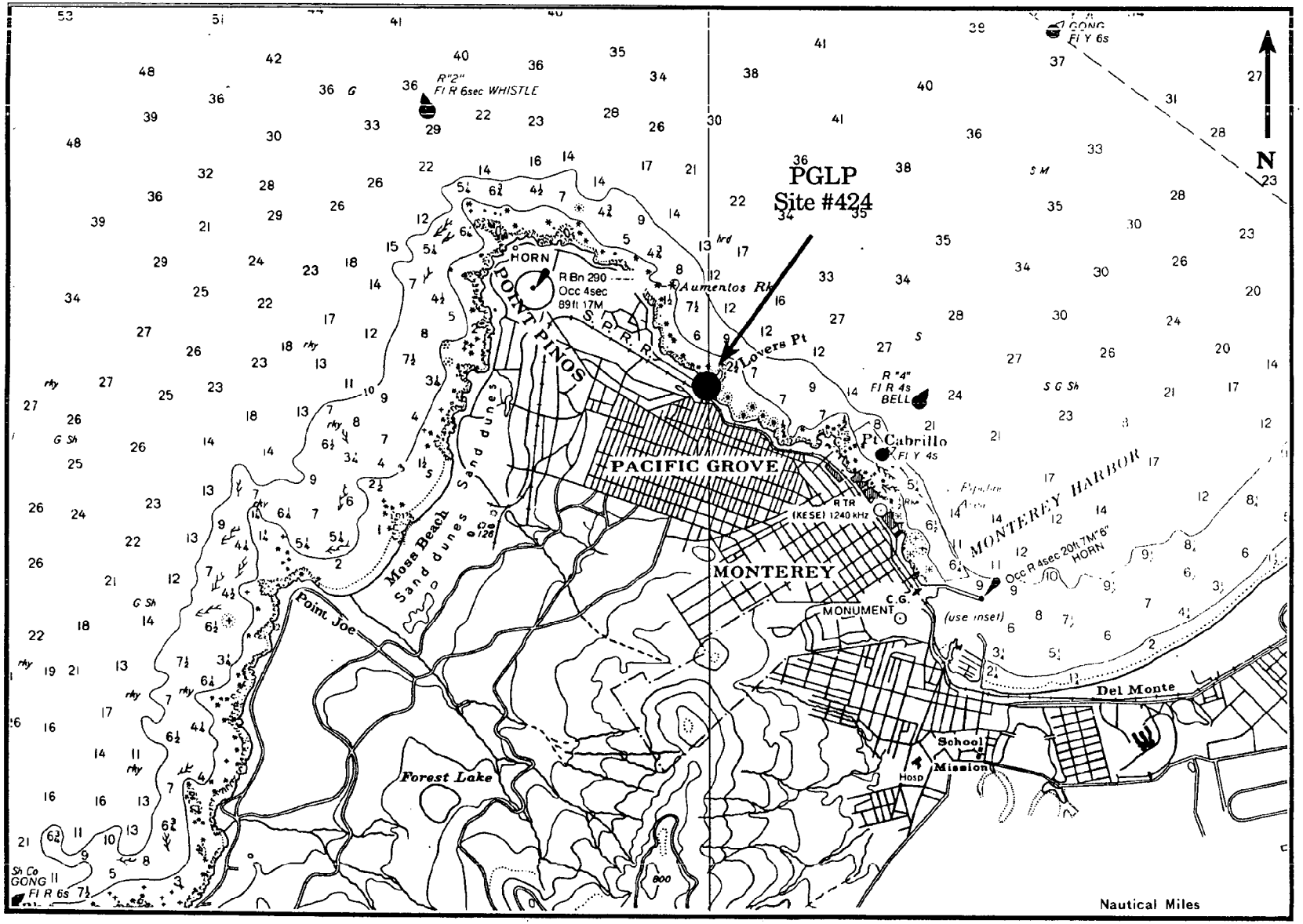
POSSIBLE CONTAMINANTS - No obvious nearby sources of contamination were observed, although mussels from locations approximately 1.5 miles east of the site have been noted for their very high lead concentrations, probably due to historic disposal of waste from anchovy canning operations.

ENVIRONMENTAL DATA

Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	35.0	14.1	24 February 1995



Site #424 (PGLP), Pacific Grove Lovers Point.



Site #424 (PGLP), Pacific Grove Lovers Point (from chart 18685).

Site #424 (PGLP), Pacific Grove Lovers Point.

GERG SITE NUMBER - 425 **DESIGNATOR** - MBML

SITE - MOSS LANDING BEACH, MONTEREY BAY, CA

NOMINAL SITE CENTER - 36°48.07'N 121°47.38'W

LOCATED ON NOS CHART # - 18685

SITE ACCESS - This site is located on a small rock outcrop just north of the Moss Landing pier. From California Highway 1 in Moss Landing, just south of the Pacific Gas and Electric power plant, take Moss Landing Road toward the sea. Take the first right and cross the one-lane bridge. Just across the bridge, turn left and park in the parking lot. Walk over the dunes and out to the beach. Proceed to the right along the beach and under the pier.

SITE DESCRIPTION - The site is a rock outcrop approximately 30 meters north of the pier. The outcrop was approximately 10 meters long. The site center is on the beach approximately 10 meters above the rock outcrop. Discrete collection stations were in the middle and at either end of the rock outcrop, approximately 5 meters apart.

BIVALVE COLLECTIONS

1995 *Mytilus californianus* was plentiful on the rock outcrop, but *Mytilus edulis* was also present on protected portions of the rocks at the southern end of the outcrop. Consequently, care was necessary to avoid mixing *M. edulis* into the samples. Collected organisms ranged from approximately 50–75 millimeters in shell length.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

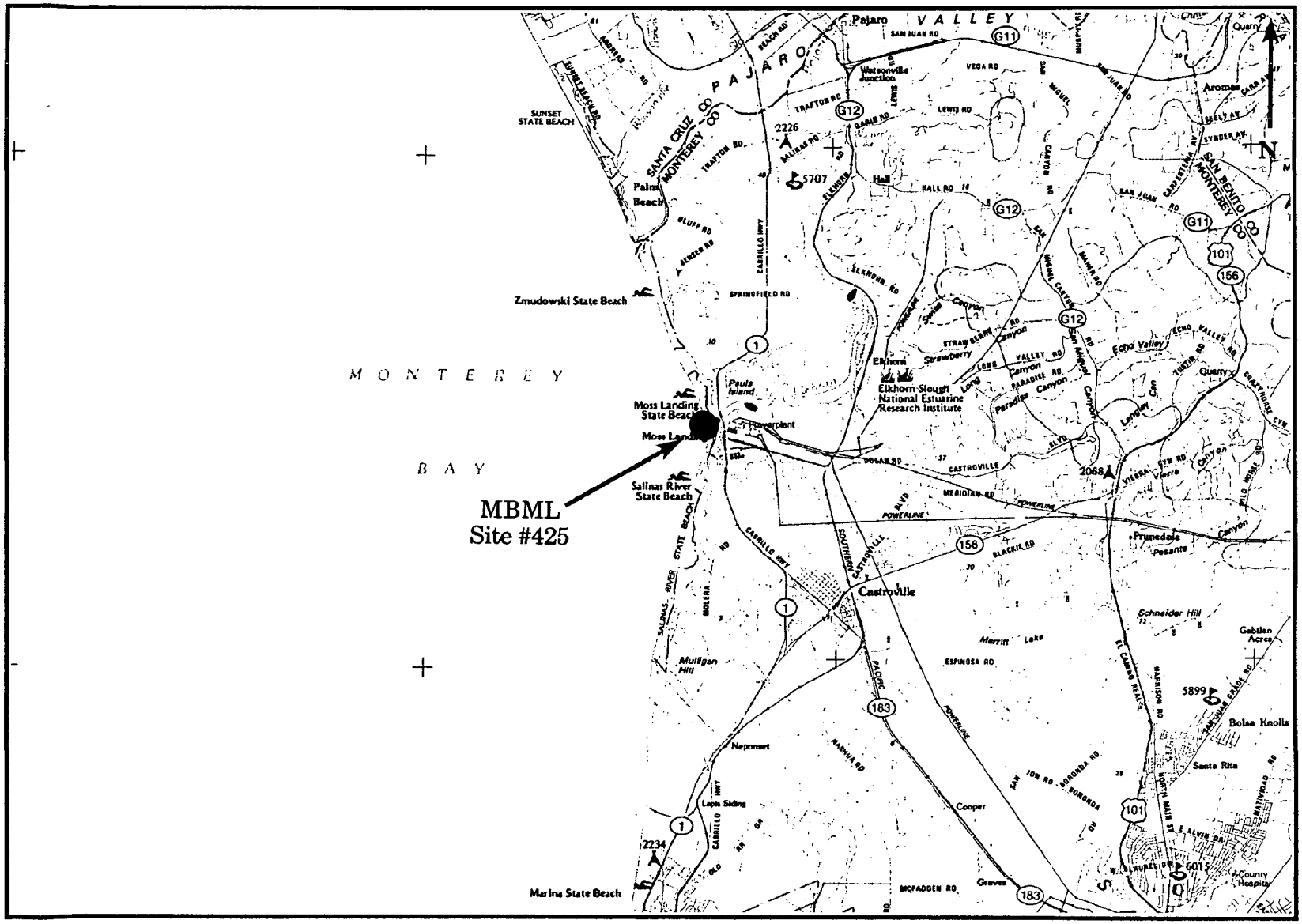
Bivalves - hand
Sediments - NA

WATER DEPTH - +0.5 m MLLW

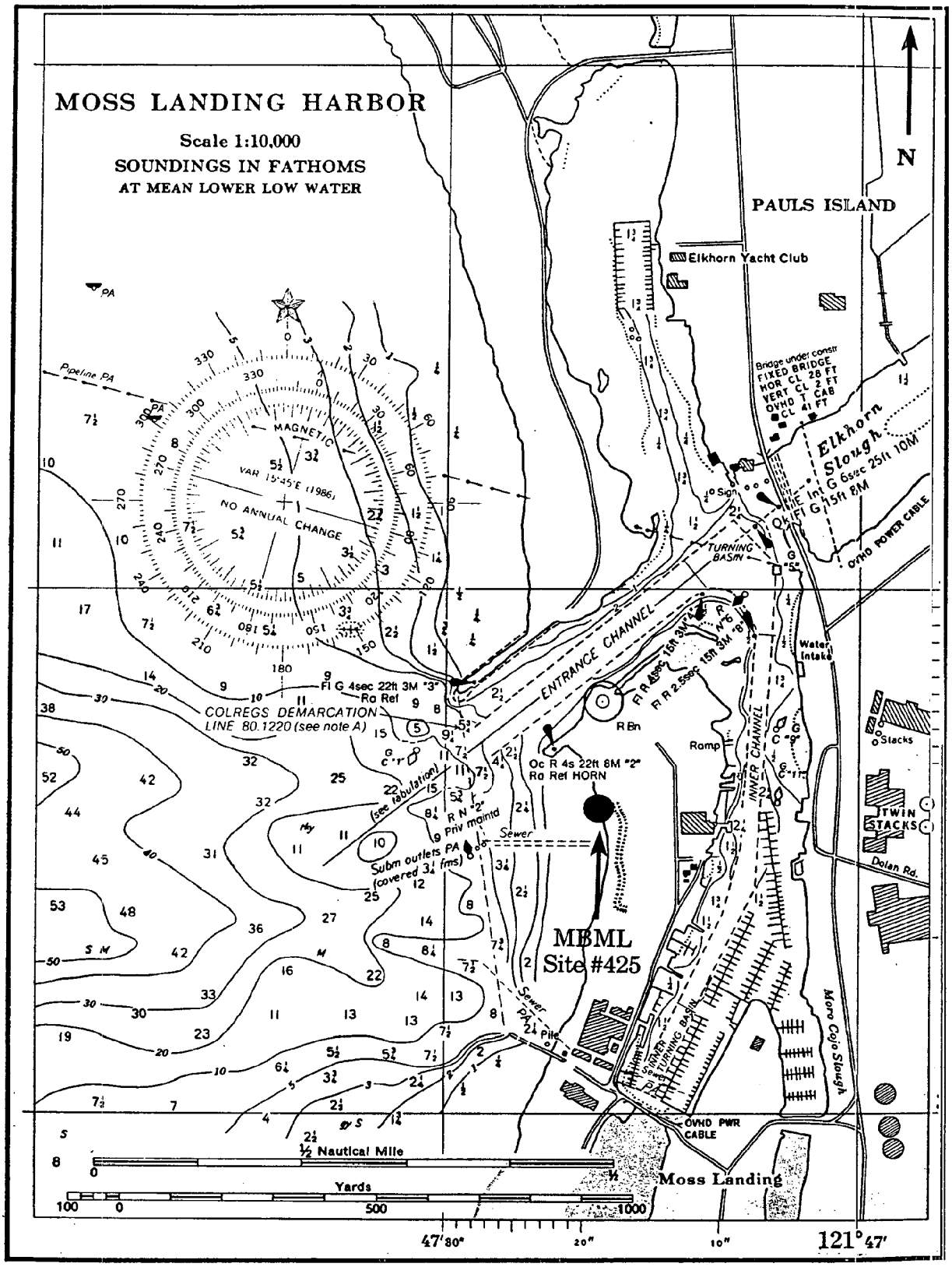
POSSIBLE CONTAMINANTS - The mouth of Moss Landing Harbor is approximately 0.25 miles north of the site. A large commercial fishing fleet is berthed within the harbor and a large fossil fuel power plant and an aluminum refractory are located adjacent to the harbor.

ENVIRONMENTAL DATA

Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	33.0	17.4	24 February 1995



Site #425 (MBML), Monterey Bay Moss Landing Beach.



Site #425 (MBML), Monterey Bay Moss Landing Beach (from chart 18685).

Site #425 (MBML), Monterey Bay Moss Landing Beach.

GERG SITE NUMBER - 426 **DESIGNATOR** - MBES

SITE - ELKHORN SLOUGH, MONTEREY BAY, CA

NOMINAL SITE CENTER - 36°48.59'N 121°47.11'W

LOCATED ON NOS CHART # - 18685

SITE ACCESS - This site is on the Highway 1 Bridge across Elkhorn Slough near Moss Landing. A boat is required. From Moss Landing Harbor take a small boat toward the harbor entrance to the west. At the range markers turn right and proceed to the Highway 1 bridge across the mouth of Elkhorn Slough.

SITE DESCRIPTION - The site center is the boat speed-limit sign posted on the seaward side of the Highway 1 bridge. Discrete collection stations were on the seaward bridge-support pilings in the first, second, and fourth rows of pilings, counting from the west end of the bridge.

BIVALVE COLLECTIONS

1995 *Mytilus californianus* was not present on all pilings, but was abundant on some. Collected organisms ranged from approximately 40–80 millimeters in shell length.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

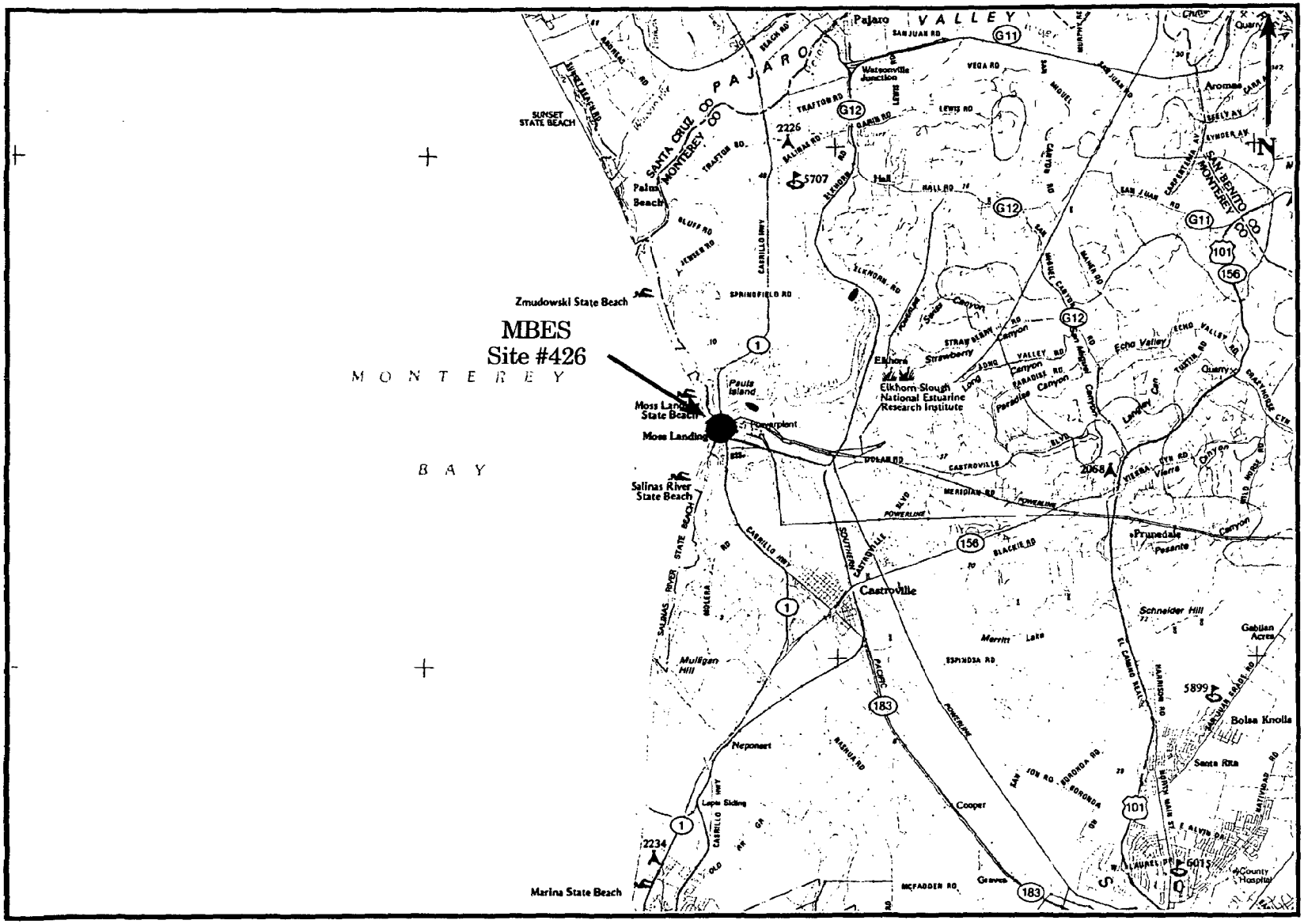
Bivalves - hand
Sediments - NA

WATER DEPTH - +0.75 m MLLW

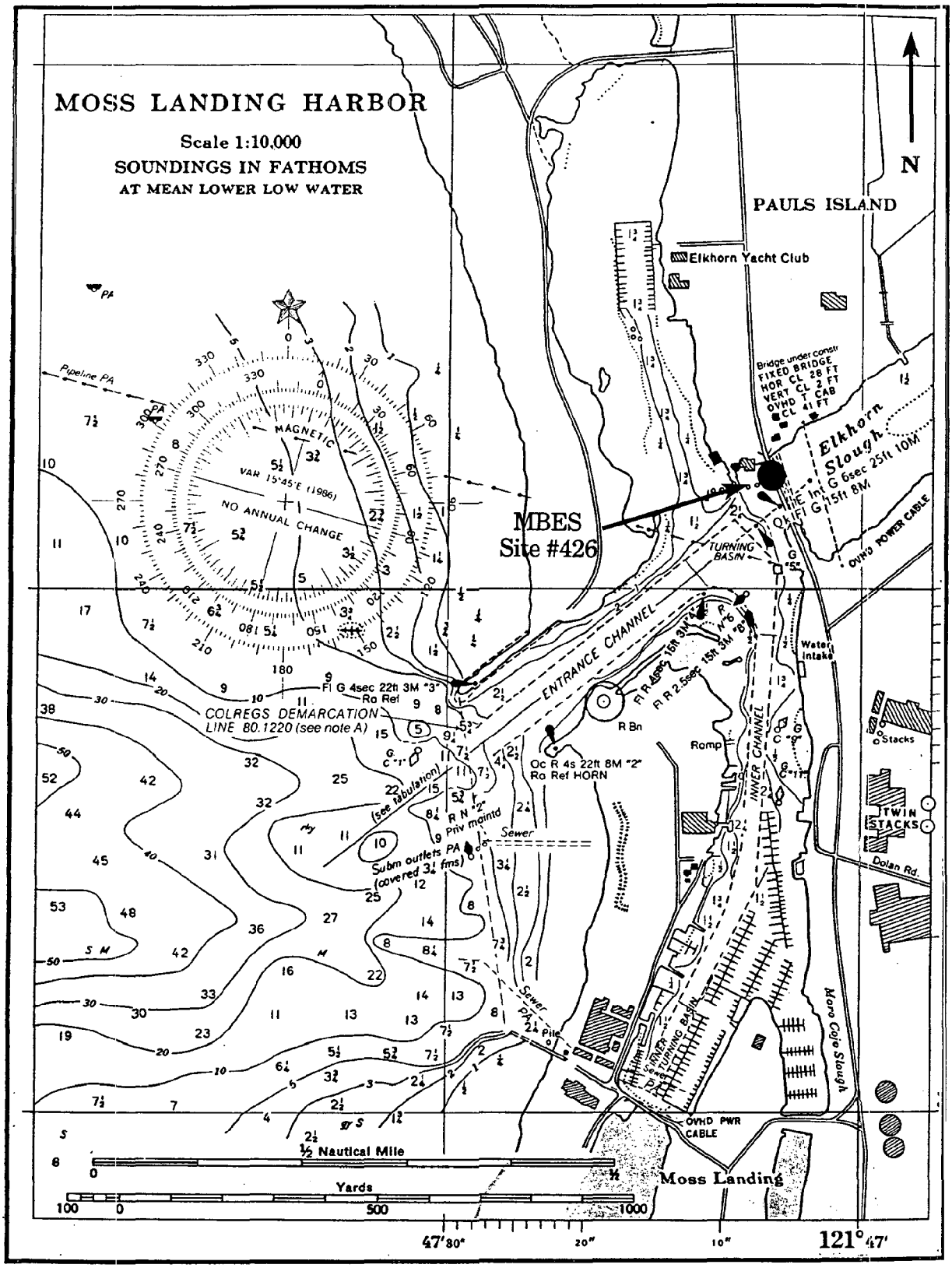
POSSIBLE CONTAMINANTS - A fossil fuel power plant and an aluminum refractory are located nearby, adjacent to Moss Landing Harbor, and Elkhorn Slough drains a large agricultural area inshore of the slough. Bivalves from this area have previously been noted for high pesticide concentrations.

ENVIRONMENTAL DATA

Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	35.0	16.2	28 February 1995

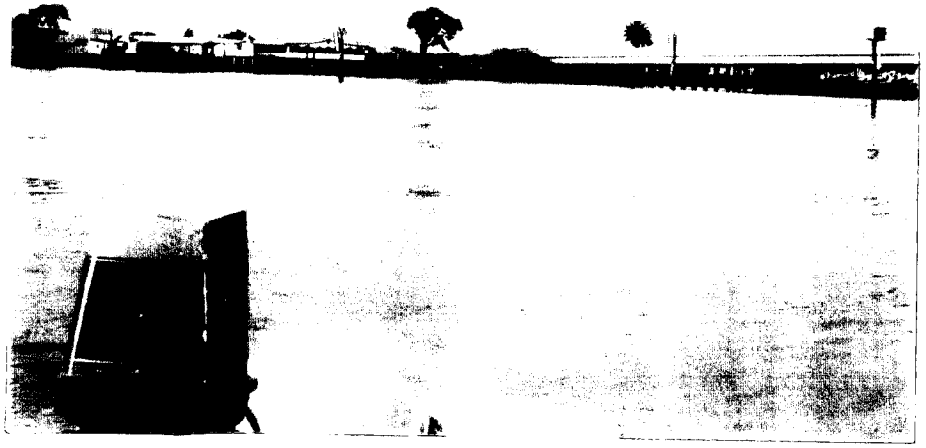


Site #426 (MBES), Monterey Bay Elkhorn Slough.



Site #426 (MBES), Monterey Bay Elkhorn Slough (from chart 18685).

Site #426 (MBES), Monterey Bay Elkhorn Slough.



GERG SITE NUMBER - 427 **DESIGNATOR** - MBSC

SITE - POINT SANTA CRUZ, MONTEREY BAY, CA

NOMINAL SITE CENTER - 36°57.25'N 122°01.48'W

LOCATED ON NOS CHART # - 18685

SITE ACCESS - This site is located near Point Santa Cruz in Santa Cruz. From the Highway 1/Highway 17 interchange near Santa Cruz, take Highway 1 north. Approximately 1 mile after Highway 1 turns right and begins following Mission Street, turn left (southeast) onto Bay Street. Where Bay Street ends, turn right onto West Cliff Drive and proceed to Pelton Avenue. Park in the parking lot on the right, just past Pelton Avenue. Climb over the fence and down the cliff to the cove just south of the surfer monument (a bronze statue) at the end of Pelton Avenue. Note that along this segment of the coast, the shoreline runs approximately north-south, with the sea being east of the shore.

SITE DESCRIPTION - The site center is a 24-inch drain pipe that protrudes from the cliff above the cove. The middle of three discrete collection stations was on the boulders at the base of the cliff, directly below the drain. The other two discrete stations were at the opposite ends of the cove, approximately 50 meters north and south of the middle station.

BIVALVE COLLECTIONS

1995 *Mytilus californianus* was plentiful, but mostly small organisms were present. Collected organisms ranged from approximately 45–70 millimeters in shell length.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

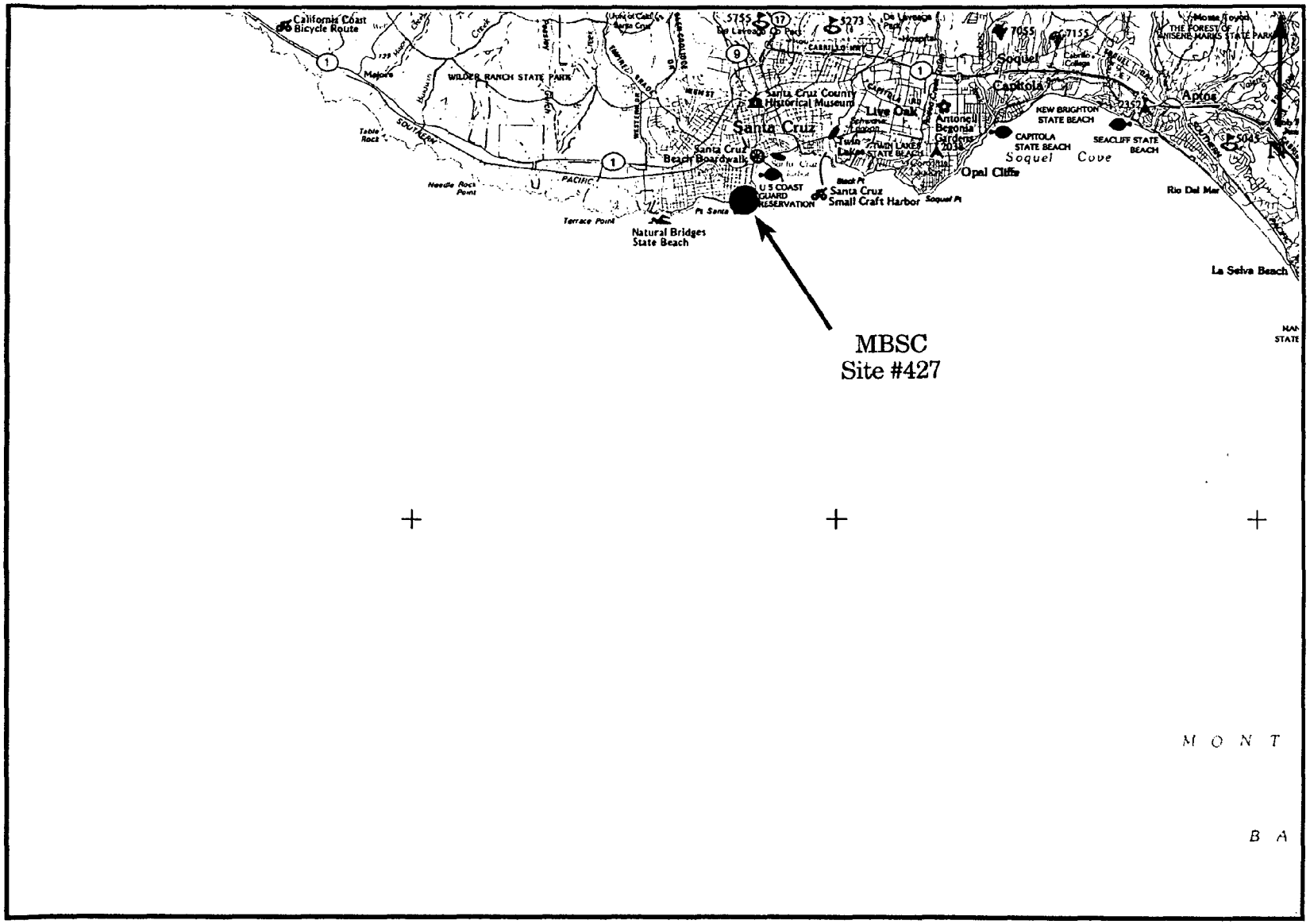
Bivalves - hand
Sediments - NA

WATER DEPTH - +1.25 m MLLW

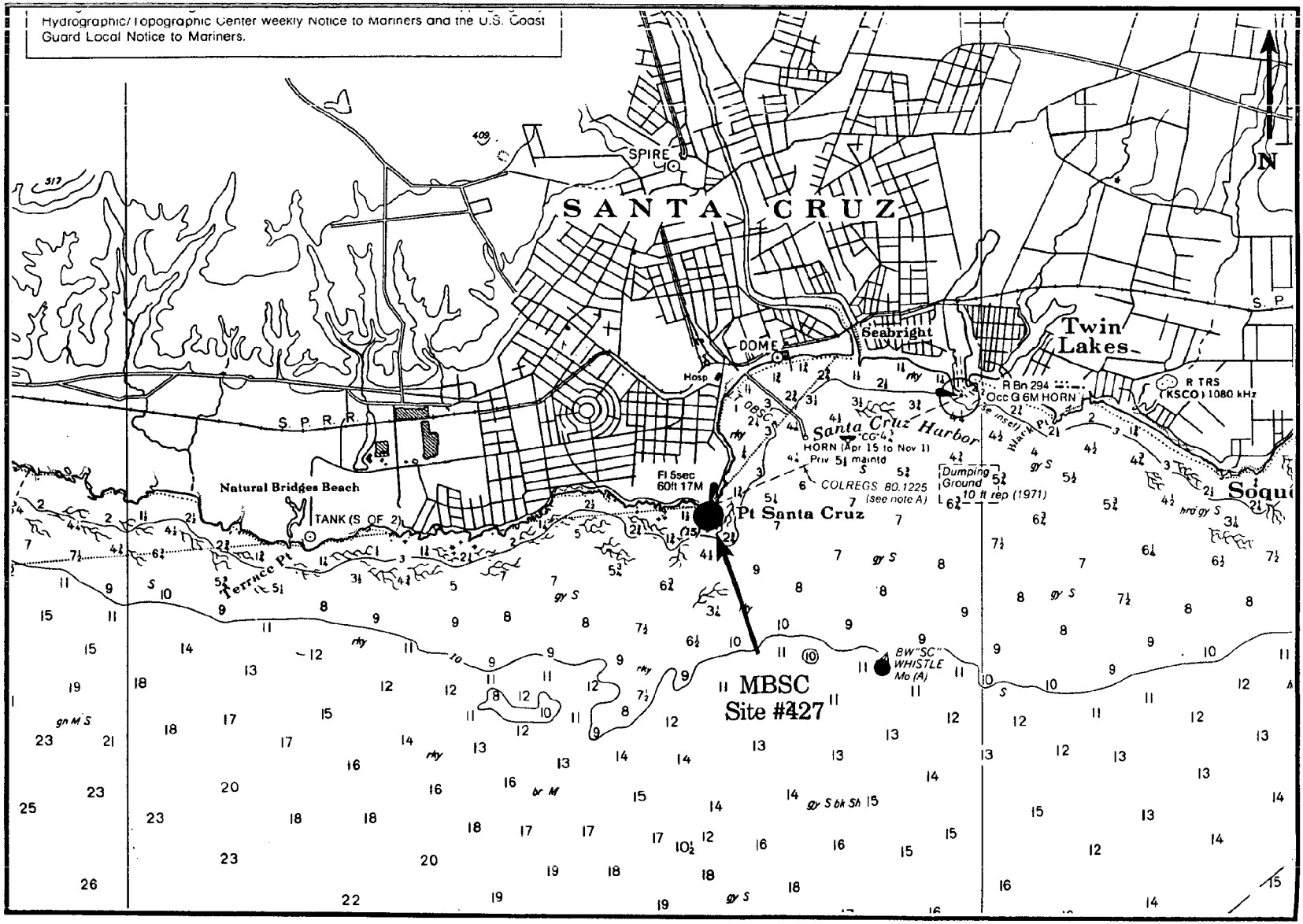
POSSIBLE CONTAMINANTS - The 24-inch drain pipe at the site center probably conveys storm runoff into the cove.

ENVIRONMENTAL DATA

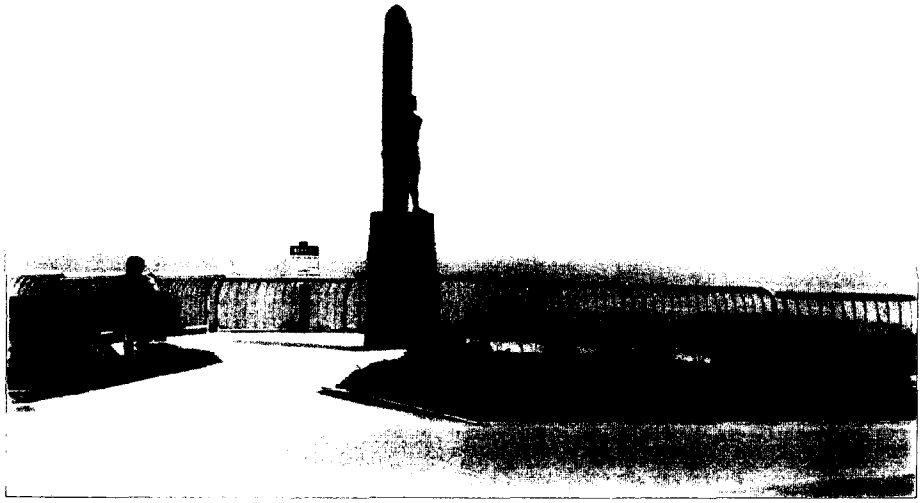
Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	35.0	15.0	25 February 1995



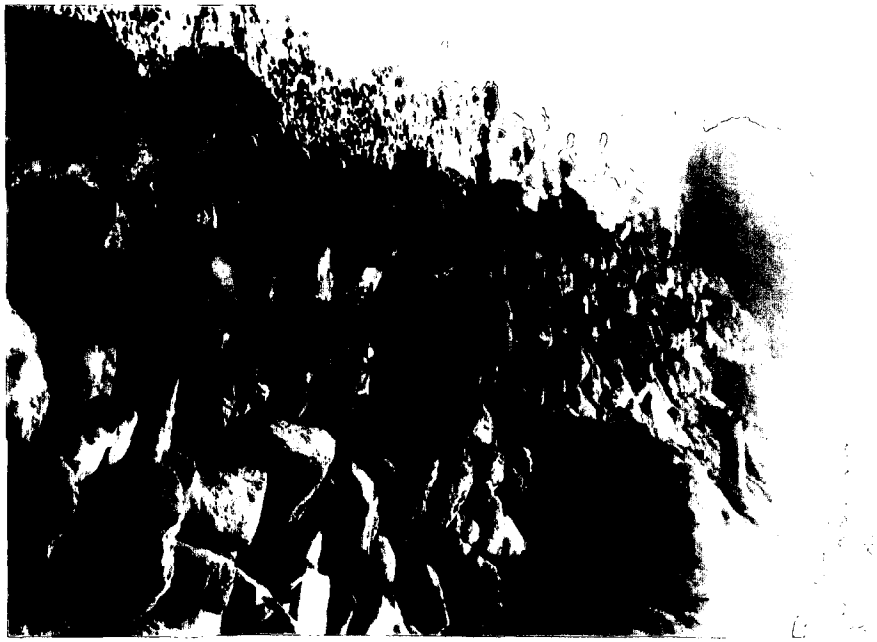
Site #427 (MBSC), Monterey Bay Point Santa Cruz.



Site #427 (MBSC), Monterey Bay Point Santa Cruz (from chart 18685).



Site #427 (MBSC), Monterey Bay Point Santa Cruz.



GERG SITE NUMBER - 428 **DESIGNATOR** - SFDB

SITE - DUMBARTON BRIDGE, SAN FRANCISCO BAY, CA

NOMINAL SITE CENTER - 37°30.16'N 122°07.28'W

LOCATED ON NOS CHART # - 18651

SITE ACCESS - The site is located on the Dumbarton Bridge in southern San Francisco Bay. Access to this site is by boat. There are several marinas and boat launch ramps in the vicinity. Launch a boat from the nearest convenient location and proceed to the Dumbarton Bridge.

SITE DESCRIPTION - Mussels were collected from the bridge pilings near the center of the channel. The site center is the fifth concrete piling from the east end of the fishing pier that extends into the bay from the western shore. The discrete collection stations were the fourth, fifth, and sixth pilings. Specimens were collected from the southern side of the pilings.

BIVALVE COLLECTIONS

1995 *Mytilus edulis* was abundant at this site. Collected organisms ranged from approximately 35-65 millimeters in shell length.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

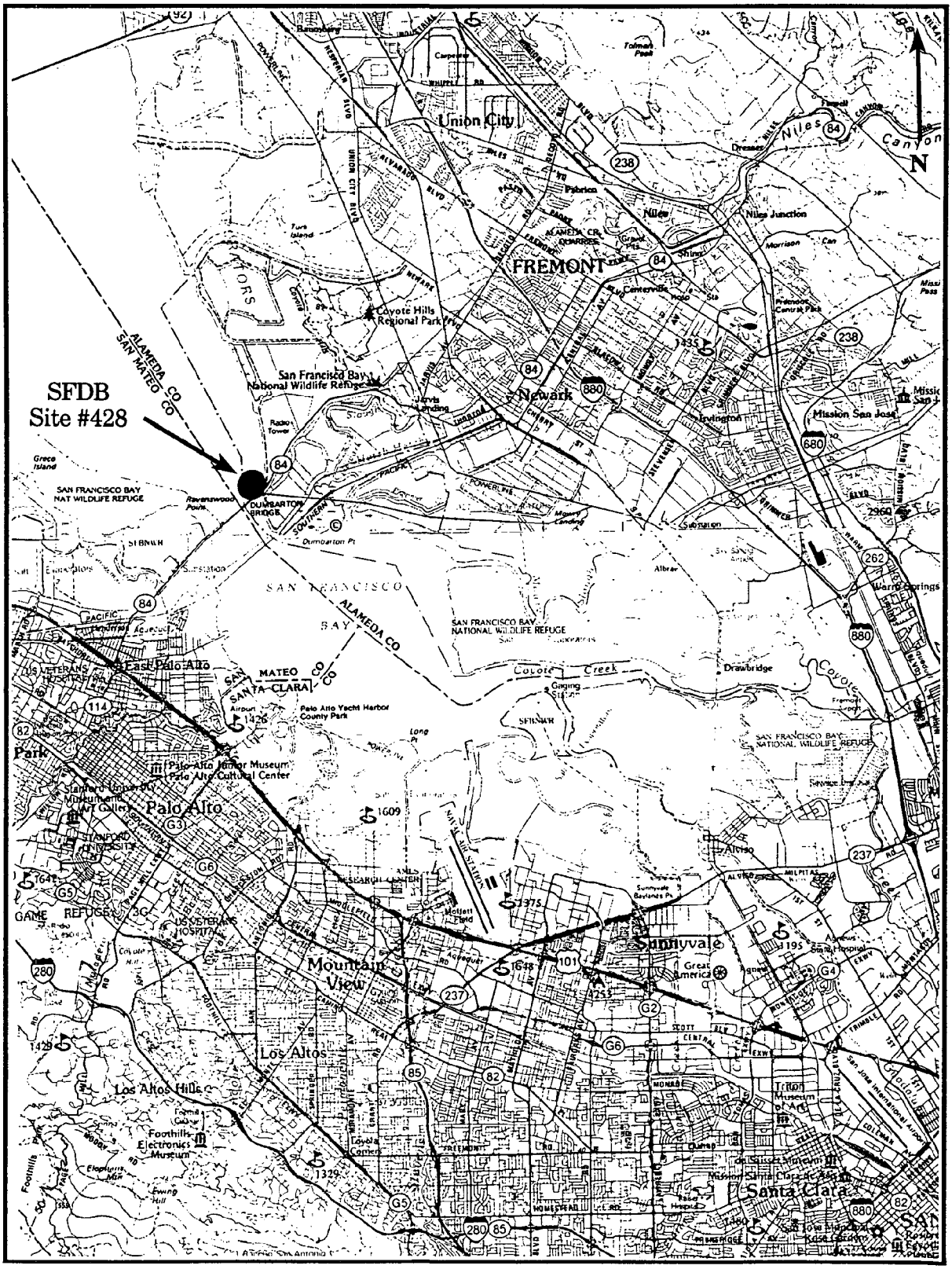
Bivalves - hand
Sediments - NA

WATER DEPTH - +0.25 m MLLW

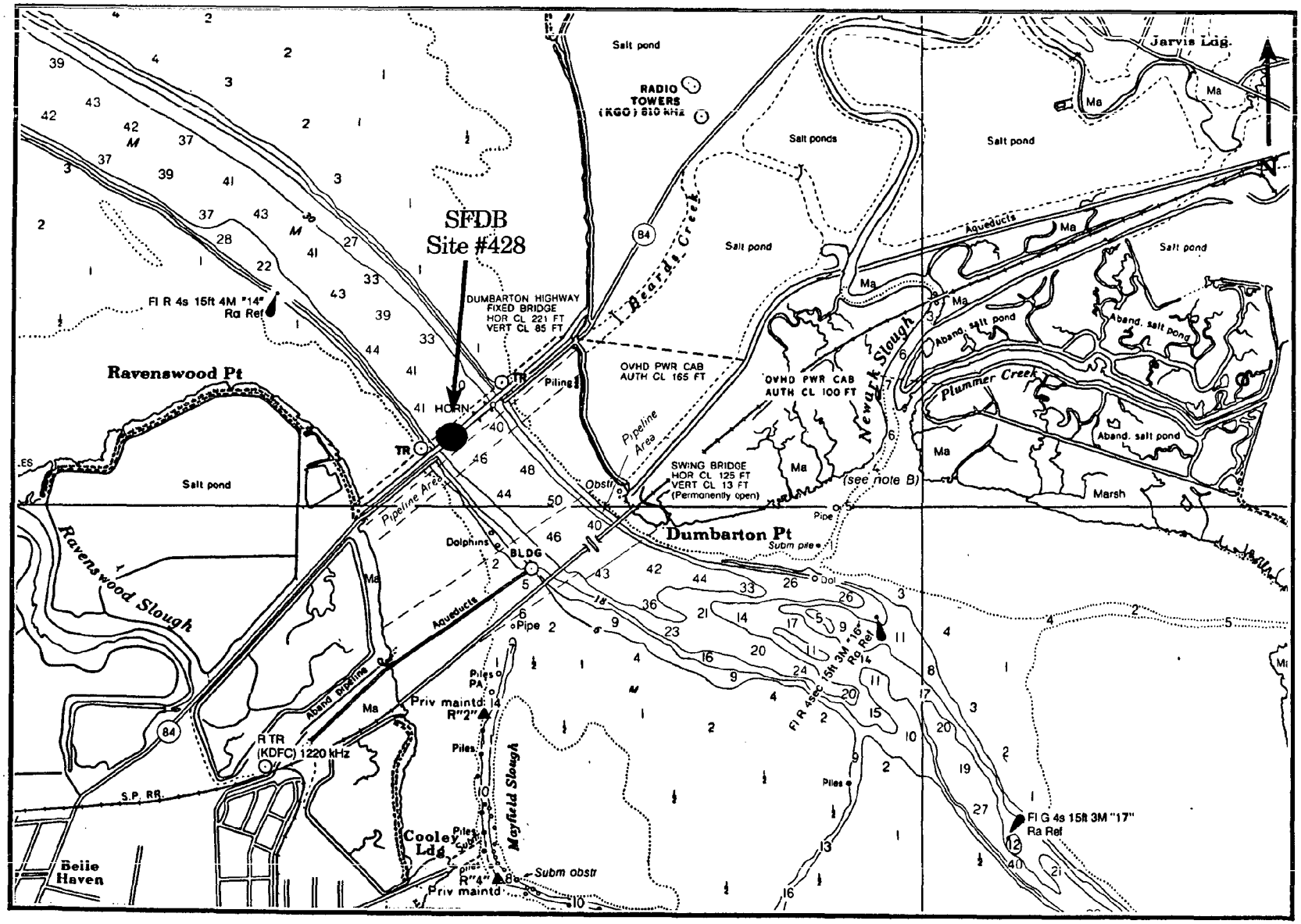
POSSIBLE CONTAMINANTS - Southern San Francisco Bay receives large quantities of municipal and industrial wastewater, as well as urban storm runoff.

ENVIRONMENTAL DATA

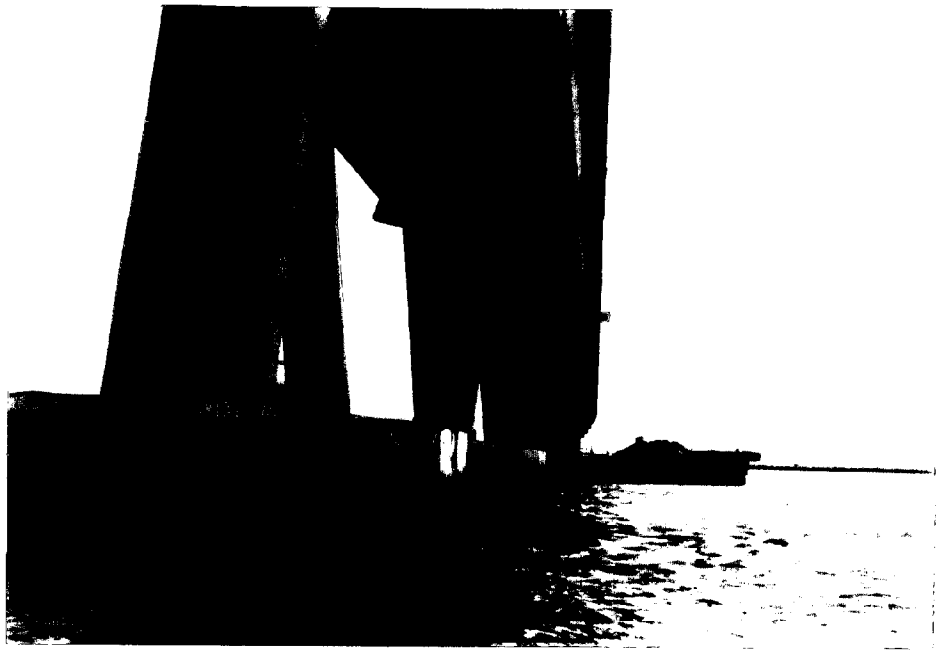
Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	15.0	11.8	13 February 1995



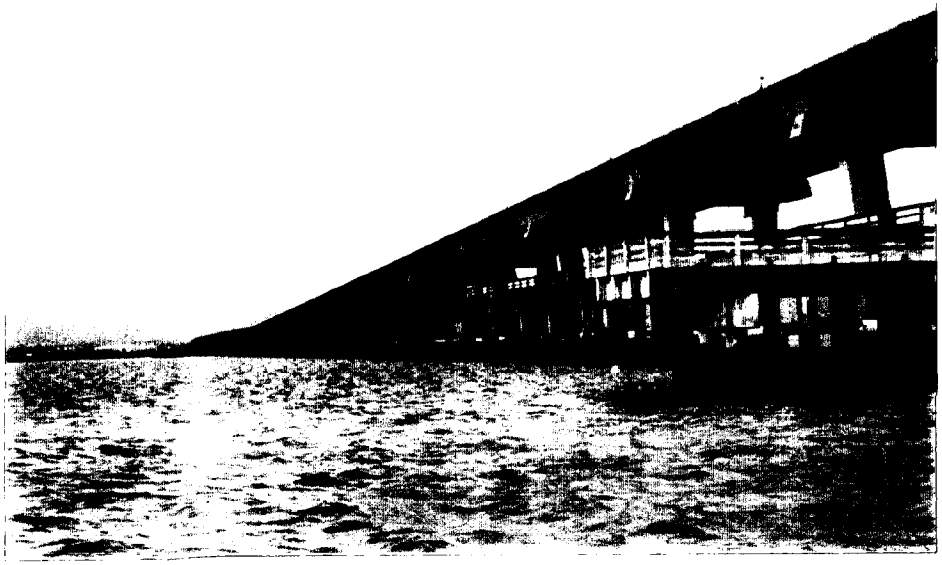
Site #428 (SFDB), San Francisco Bay Dumbarton Bridge.

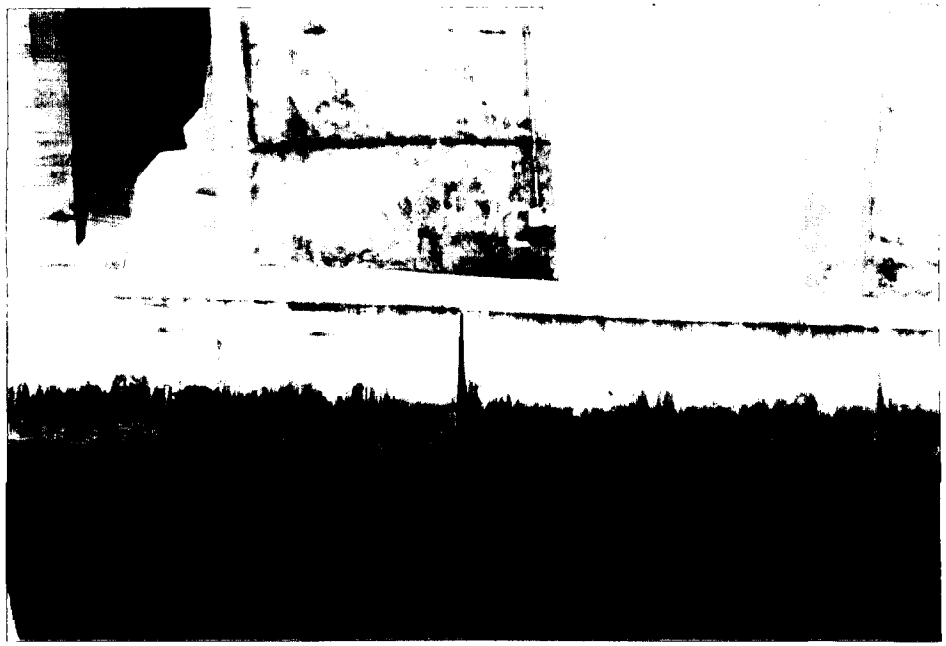


Site #428 (SFDB), San Francisco Bay Dumbarton Bridge (from chart 18651).



Site #428 (SFDB), San Francisco Bay Dumbarton Bridge.





GERG SITE NUMBER - 429 **DESIGNATOR** - SFSM

SITE - SAN MATEO BRIDGE, SAN FRANCISCO BAY, CA

NOMINAL SITE CENTER - 37°34.68'N 122°15.22'W

LOCATED ON NOS CHART # - 18651

SITE ACCESS - The San Mateo Bridge is located in South San Francisco Bay, east of Foster City. Access to this South San Francisco Bay site is by boat only. There are several marinas and boat launch ramps in the vicinity. Launch a boat from the nearest convenient location and proceed to the San Mateo Bridge.

SITE DESCRIPTION - Mussels were collected from the fishing pier pilings adjacent to the western side of the San Mateo Bridge. The site center is the south side of the first double piling on the San Mateo Bridge east of the east end of the fishing pier. The site center piling is 3 meters in diameter. The discrete collection stations were the southernmost three pilings at the eastern end of the fishing pier.

BIVALVE COLLECTIONS

1995 *Mytilus edulis* was abundant at this site. Collected organisms ranged from 60-100 millimeters in shell length.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

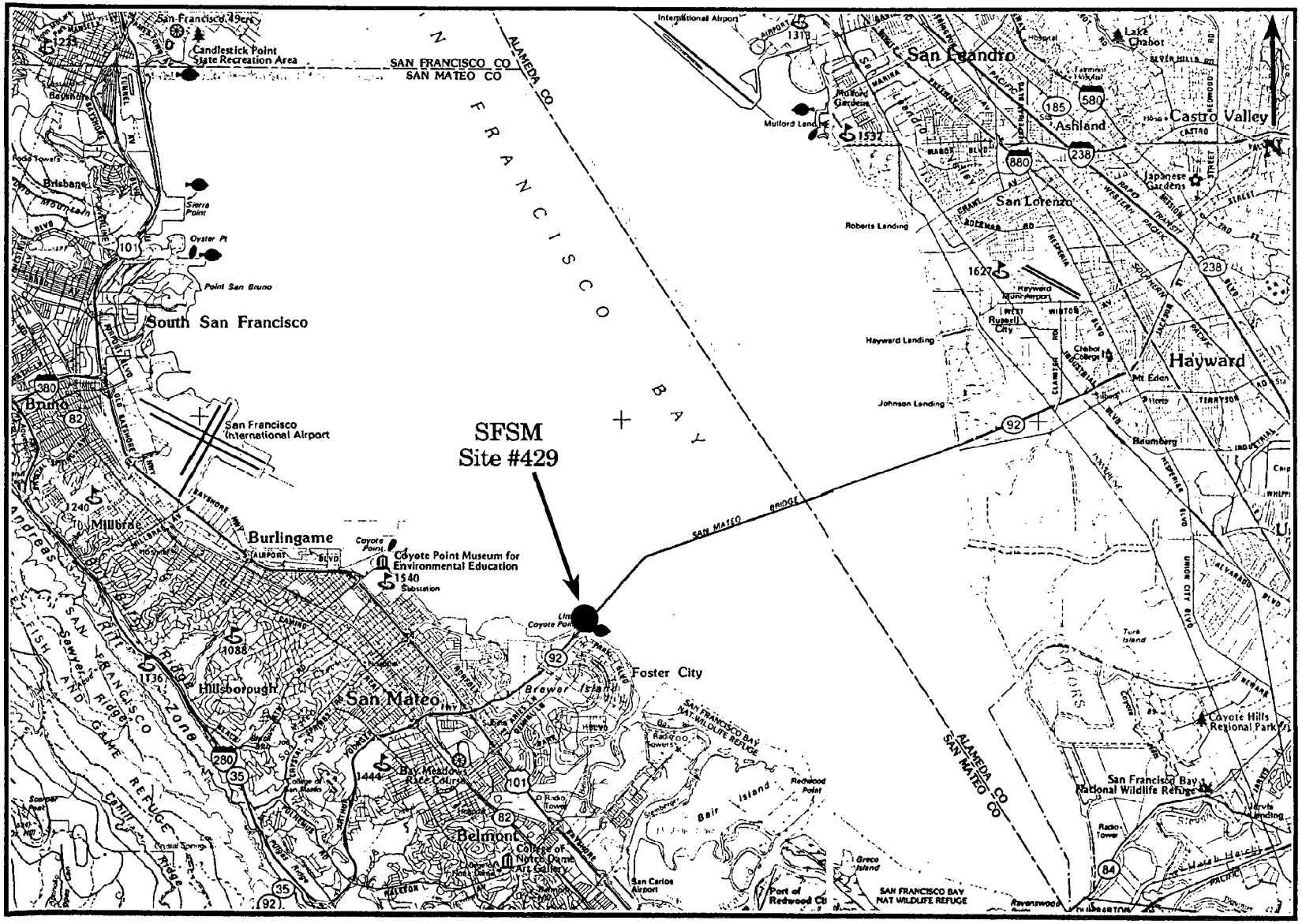
Bivalves - hand
Sediments - NA

WATER DEPTH - +0.25 m MLLW

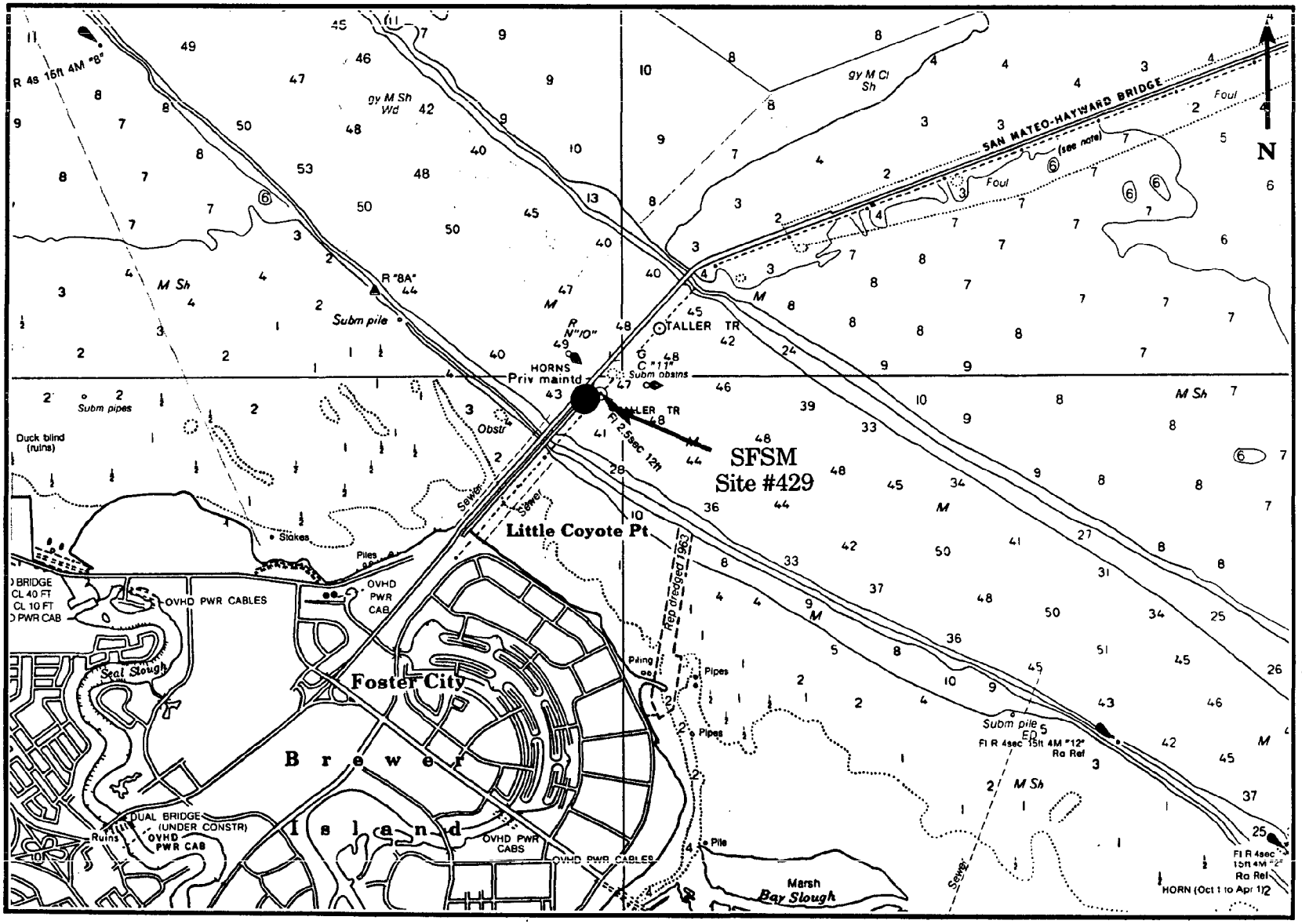
POSSIBLE CONTAMINANTS - Southern San Francisco Bay receives large quantities of municipal and industrial wastewater, as well as urban storm runoff.

ENVIRONMENTAL DATA

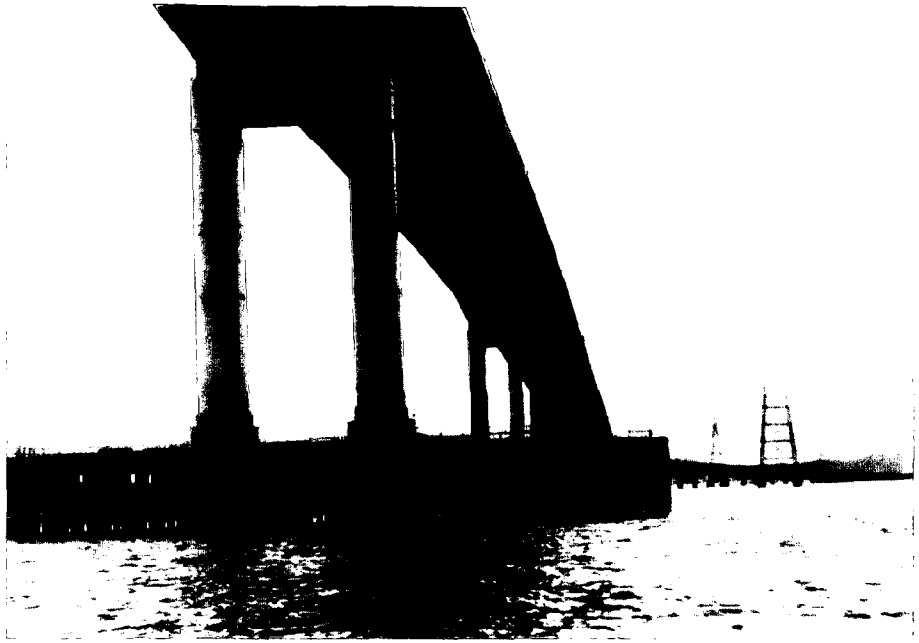
Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	16.3	11.8	13 February 1995



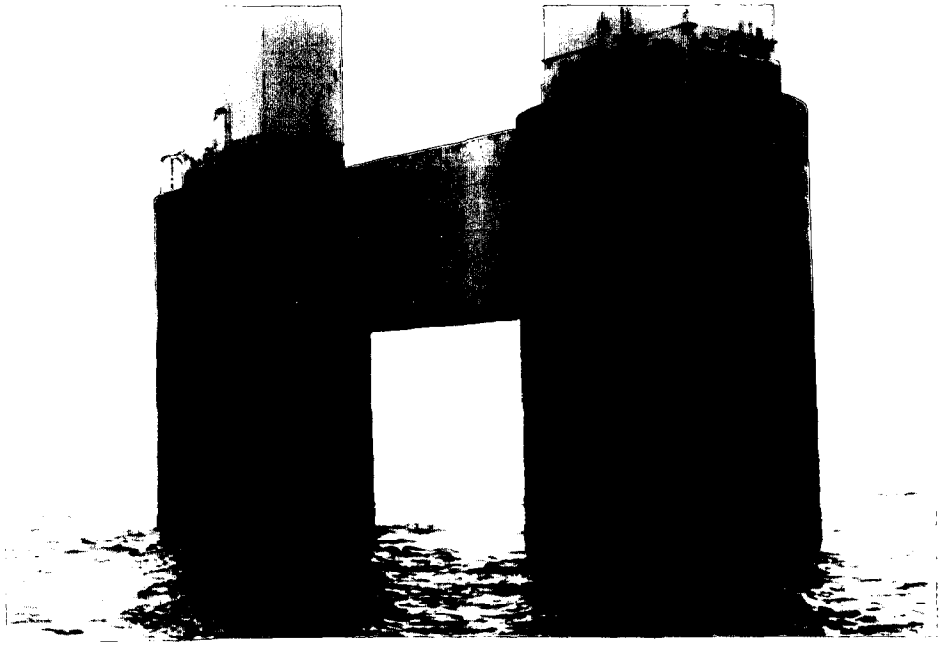
Site #429 (SFSM), San Francisco Bay San Mateo Bridge.



Site #429 (SFSM), San Francisco Bay San Mateo Bridge (from chart 18651).



Site #429 (SFSM), San Francisco Bay San Mateo Bridge.



GERG SITE NUMBER - 431 **DESIGNATOR** - SFEM

SITE - EMERYVILLE, SAN FRANCISCO BAY, CA

NOMINAL SITE CENTER - 37°49.23'N 122°19.80'W

LOCATED ON NOS CHART # - 18652

SITE ACCESS - This site is located under the Oakland side of the Bay Bridge. From Oakland, take Highway 80 towards San Francisco. Just past the toll booths on the bridge (on the Oakland side), turn right onto the CalTrans Maintenance Road. It is best to be in the far right lane when approaching the toll booths, as the access road is only a few hundred yards past the toll booths. Park outside the gate (closed at sunset). Walk through the gate and down the road, under the bridge. On the south side of the bridge find the small metal building at the water's edge, approximately 100 meters southeast of the base of the bridge.

SITE DESCRIPTION - The site center is the small metal building at the water's edge. Three discrete collection stations were utilized, with each being approximately 10 meters from the site center. The middle collection station was directly bayward from the building. Mussels occurred in small clumps around the sides and under the rocks making up the base of the Bay Bridge.

BIVALVE COLLECTIONS

1995 *Mytilus edulis* was common at this site. Collected organisms ranged from 40-90 millimeters in shell length.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

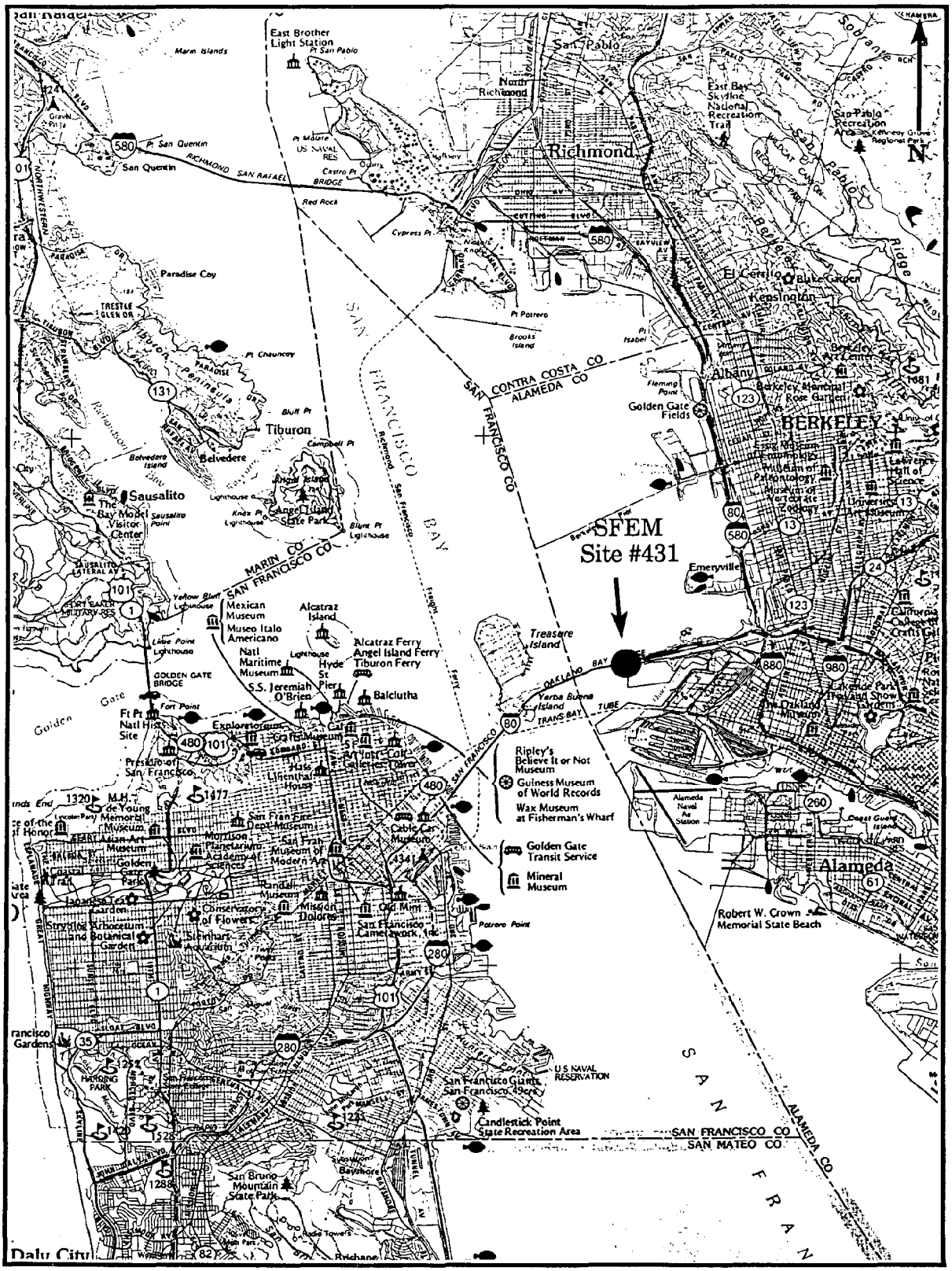
Bivalves - hand
Sediments - NA

WATER DEPTH - 0.0 MLLW

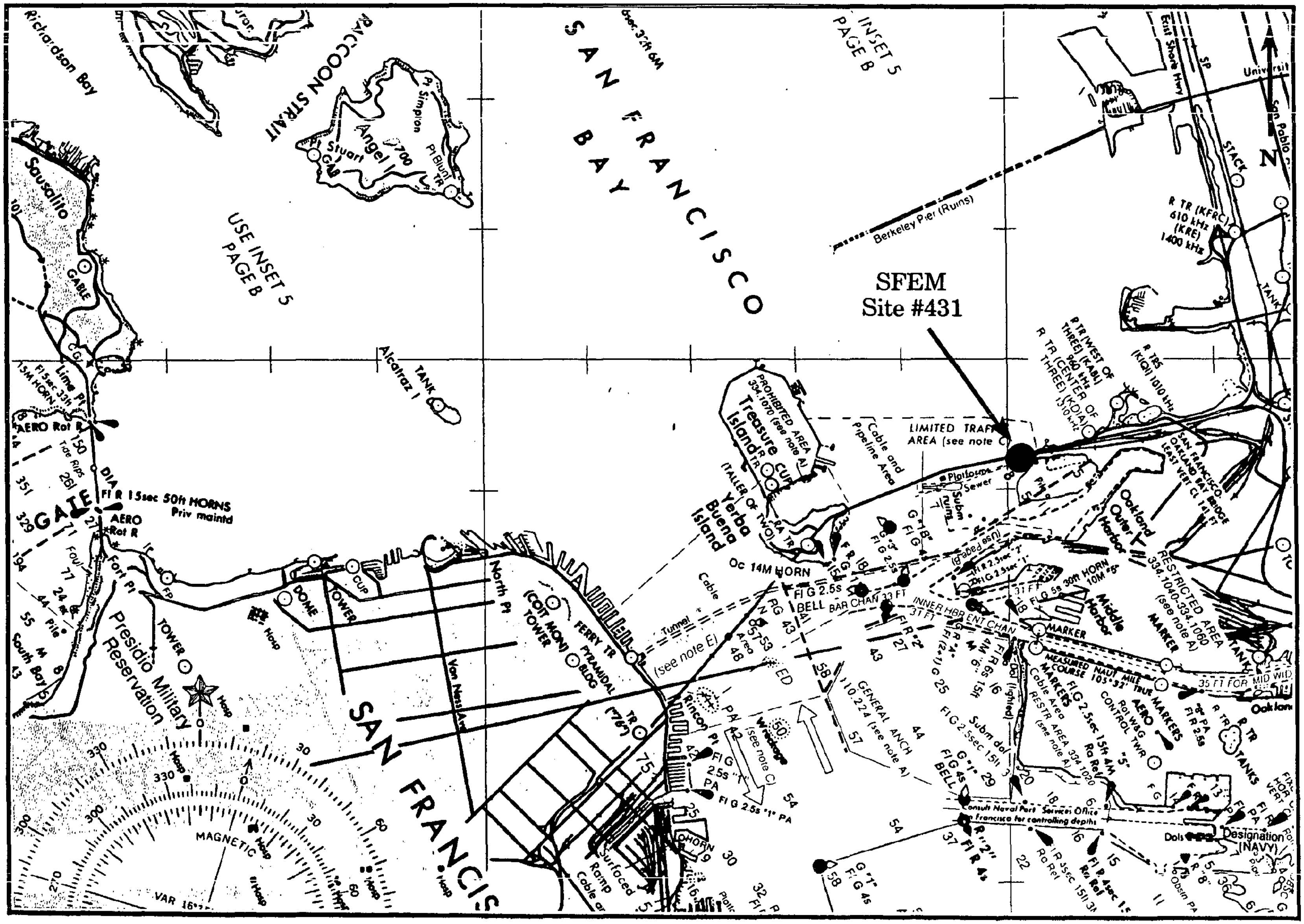
POSSIBLE CONTAMINANTS - Central San Francisco Bay receives substantial quantities of municipal and industrial wastewaters, as well as urban storm runoff. Maintenance operations on the Bay Bridge probably also are a possible source of contaminants.

ENVIRONMENTAL DATA

Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	14.7	≈ 15 (broken thermometer)	14 February 1995

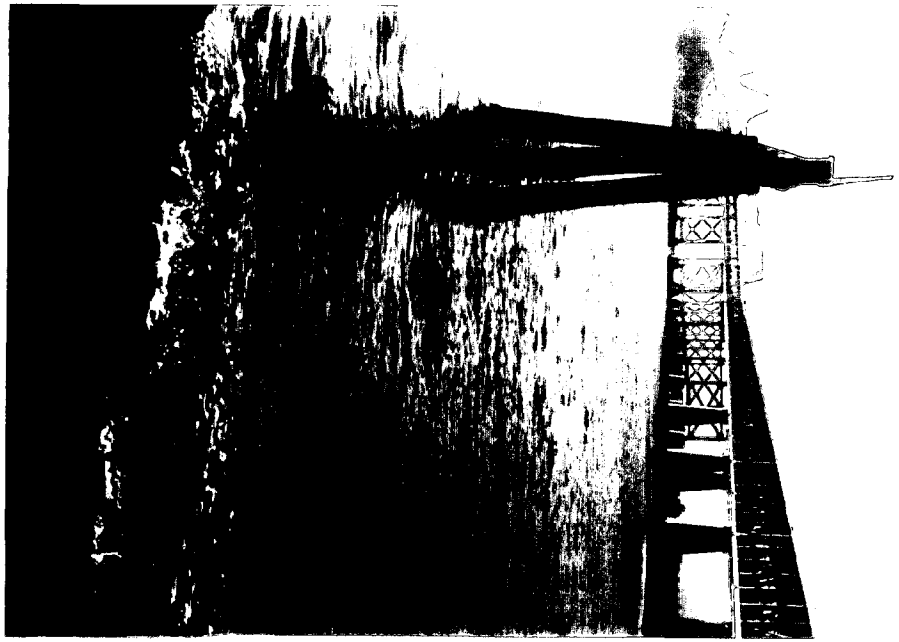


Site #431 (SFEM), San Francisco Bay Emeryville.



Site #431 (SFEM), San Francisco Bay Emeryville (from chart 18652).

Site #431 (SFEM), San Francisco Bay Emeryville.



GERG SITE NUMBER - 433 **DESIGNATOR** - TBSR

SITE - SPENGER'S RESIDENCE, TOMALES BAY, CA

NOMINAL SITE CENTER - 38°08.97'N 122°54.24'W

LOCATED ON NOS CHART # - 18643

SITE ACCESS - This site is on the west shore of Tomales Bay, near Inverness. It is on private property and prior permission must be obtained for collection, although it could be accessed by boat, without permission. The owner's name is Buddy Spenger, and his phone number is (415) 669-1294. To drive to the site, take Highway 101 to Sir Francis Drake Boulevard, just south of San Rafael. Go west on Sir Francis Drake Boulevard, approximately 3 miles past Inverness. Turn north (right) onto Pierce Point Road, then take the turn off to the right to the L Ranch, Cooperative Creamery. Drive over two cattle guards. Go past the creamery, and take the right fork heading east toward the bay. Continue on the private, unpaved road and turn right, heading past the water tanks and onto Mr. Spenger's property.

SITE DESCRIPTION - The sampling site is the rocky point on the east end of the cove that comprises Mr. Spenger's property. At the east end of the cove, find the sand-bag retaining wall. This is the site center. The three discrete collection stations were located approximately 3 meters apart along the rocks at the base of the bluff east of the site center, with the first station being approximately 3 meters from the site center.

BIVALVE COLLECTIONS

1995 *Mytilus edulis* was fairly abundant at this site. Collected organisms ranged from approximately 25-60 millimeters in shell length.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

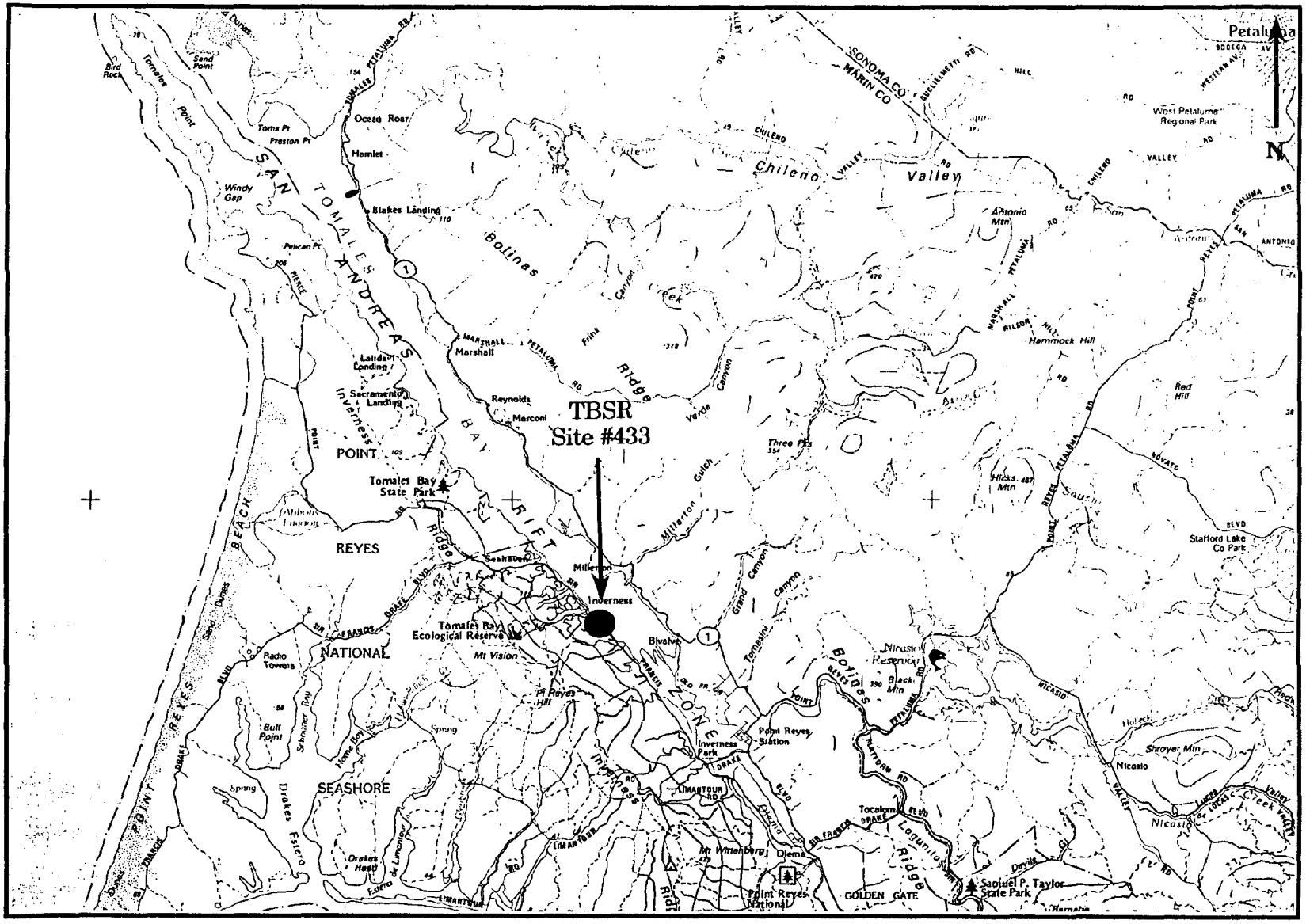
Bivalves - hand
Sediments - NA

WATER DEPTH - +0.25 m MLLW

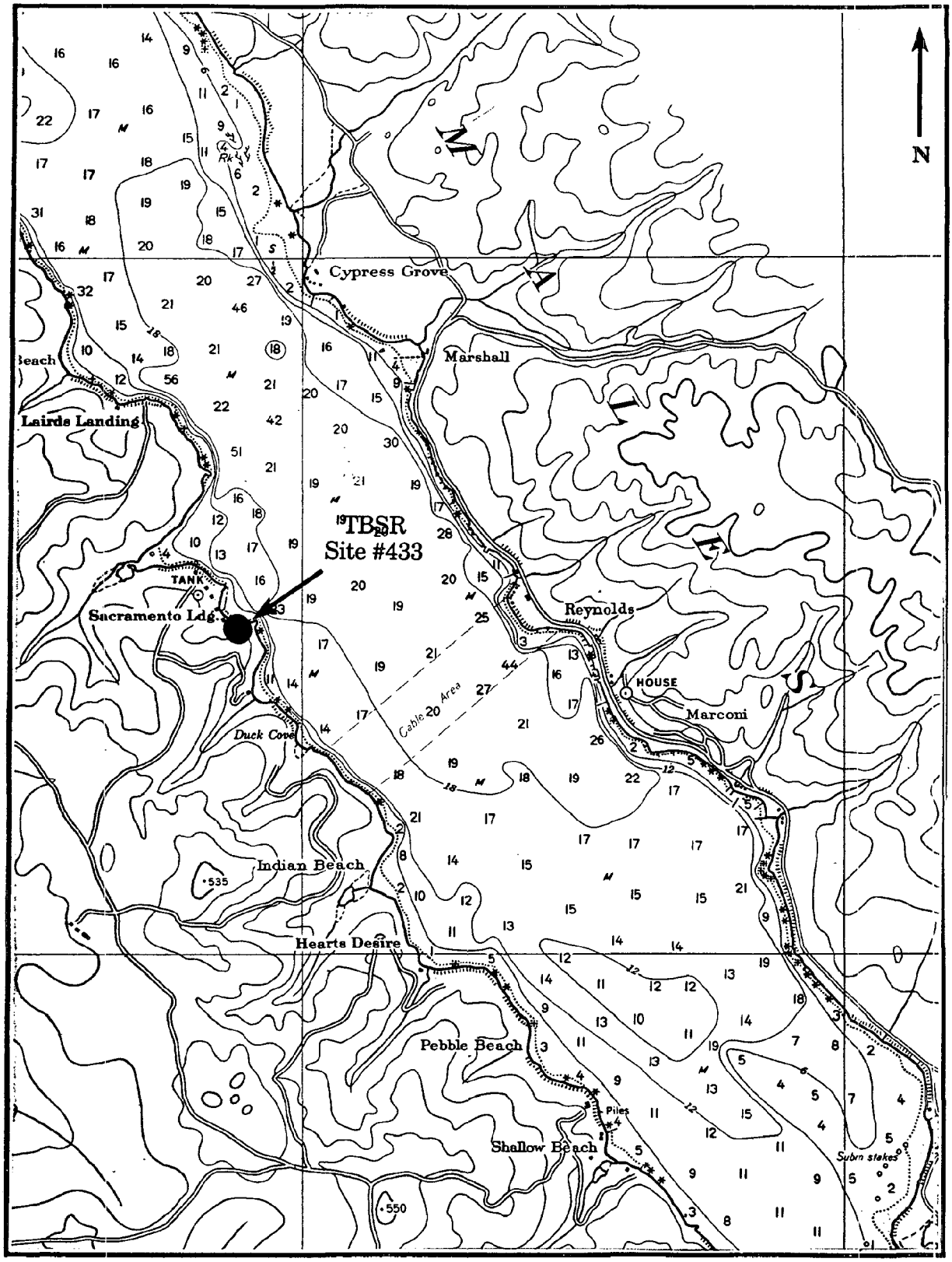
POSSIBLE CONTAMINANTS - Agricultural runoff (dairy waste) may make up the largest source of contaminants in Tomales Bay. There are no industrial or large population centers nearby. Nevertheless, anecdotal information describes leaching of industrial/military contaminants from a nearby garbage dump.

ENVIRONMENTAL DATA

Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	18.0	13.0	15 February 1995



Site #433 (TBSR), Tomales Bay Spenger's Residence.



Site #433 (TBSR), Tomales Bay Spenger's Residence (from chart 18643).

Site #433 (TBSR), Tomales Bay Spenger's Residence.

GERG SITE NUMBER - 435 **DESIGNATOR** - BBBE

SITE - BODEGA BAY ENTRANCE, BODEGA BAY, CA

NOMINAL SITE CENTER - 38°18.30'N 123°03.96'W

LOCATED ON NOS CHART # - 18643

SITE ACCESS - The sampling site is located on the northwest side of Bodega Head on the Bodega Peninsula. From the city of Santa Rosa, take Highway 101 north to Highway 12. Take Highway 12 west through Sebastopol and Bodega. Turn right onto Highway 1 and proceed to Bodega Bay. In Bodega Bay, turn left onto West Shore Road, and drive around the bay past the marinas. Stay on the road past Campbell Cove, and up onto the upper parking lot at Bodega Head. Hike down the bluff adjacent to the lower end of the parking lot, and proceed north to the large peaked rock visible from the parking lot, approximately 200 meters.

SITE DESCRIPTION - The site center is the highest point on the large outcrop (first major promontory north of the parking lot) and is distinguished by smooth sandstone, whereas the surrounding rock is rough and jagged-edged. Mussels were collected from three discrete stations seaward of the site center, within approximately 10 meters of the site center. This is an exposed site with frequent high-energy surf conditions. It should be considered a mandatory two-person site.

BIVALVE COLLECTIONS

1995 *Mytilus californianus* was abundant on the lower rocks surrounding the site center. Collected organisms ranged in size from approximately 30-80 millimeters in shell length.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

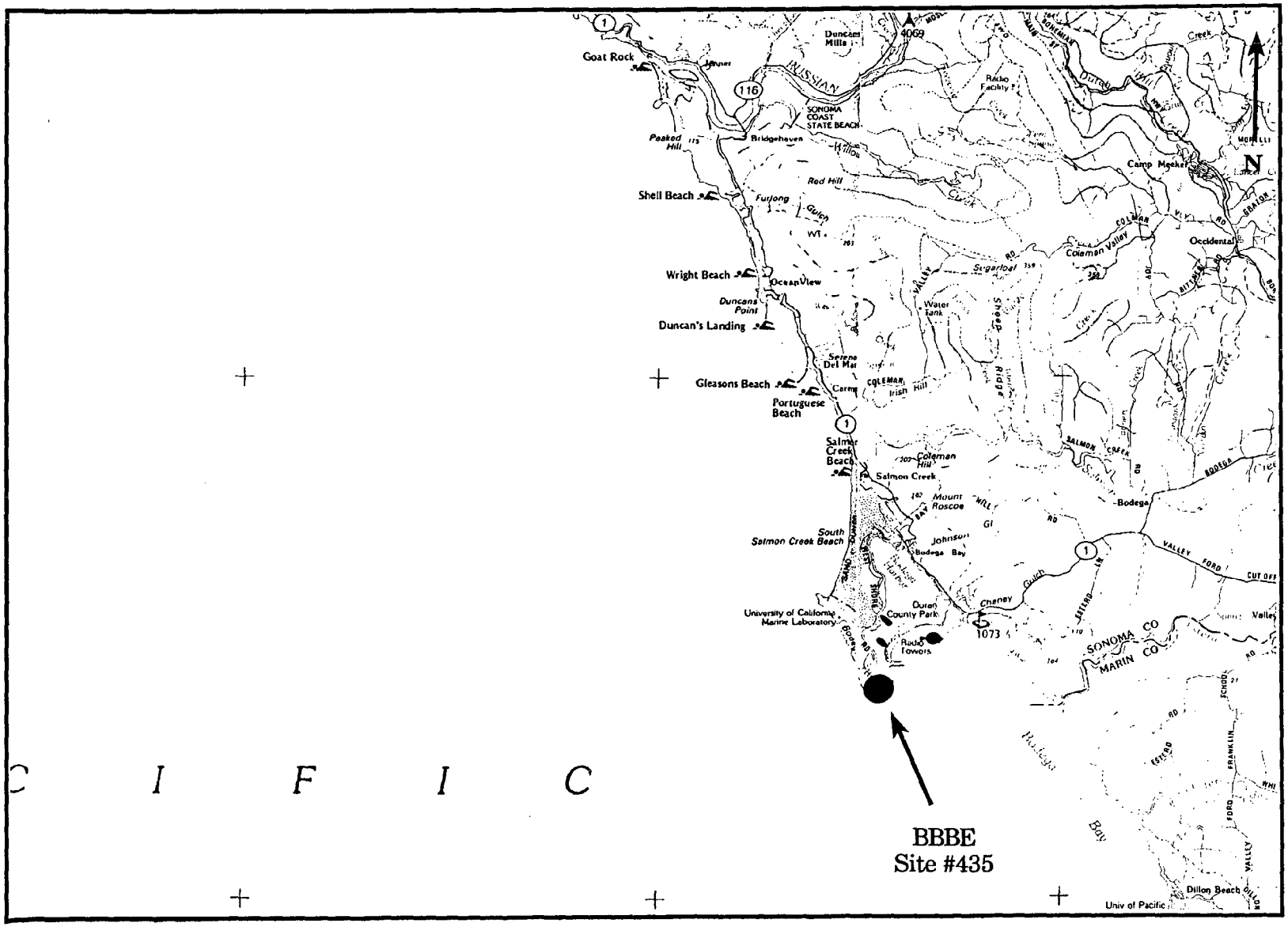
Bivalves - hand
Sediments - NA

WATER DEPTH - +1.5 m MLLW

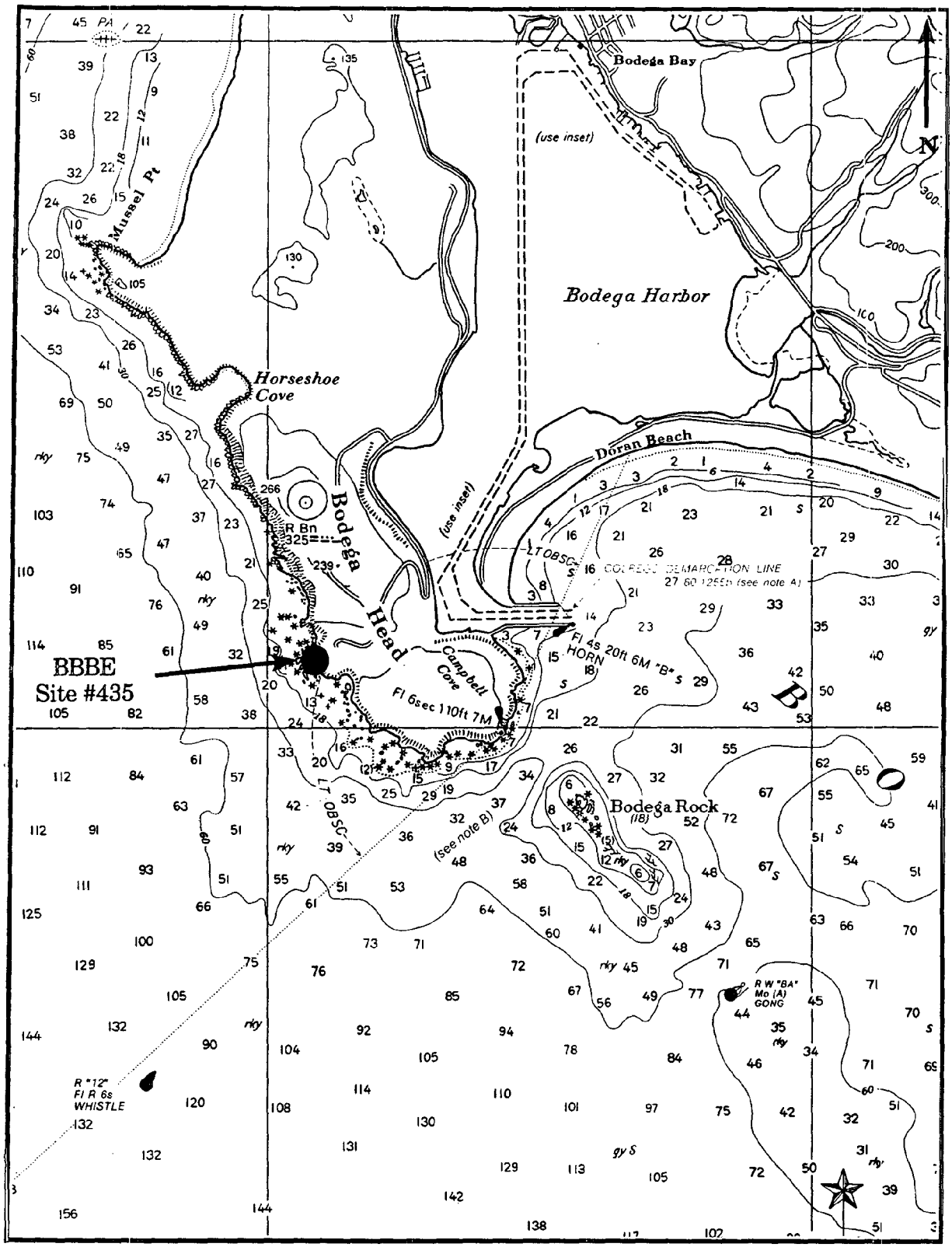
POSSIBLE CONTAMINANTS - No obvious nearby sources of contaminants were observed, although the mouth of the Russian River is 10 miles to the north. There is also a medium-sized commercial fishing industry in Bodega Bay.

ENVIRONMENTAL DATA

Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	20.0	10.4	13 January 1995



Site #435 (BBBE), Bodega Bay Bodega Bay Entrance.



Site #435 (BBBE), Bodega Bay Bodega Bay Entrance (from chart 18643).

Site #435 (BBBE), Bodega Bay Bodega Bay Entrance.

GERG SITE NUMBER - 436 **DESIGNATOR** - PALH

SITE - POINT ARENA LIGHTHOUSE, POINT ARENA, CA

NOMINAL SITE CENTER - 38°57.18'N 123°44.58'W

LOCATED ON NOS CHART # - 18640

SITE ACCESS - This site is located on Point Arena, west of the Point Arena Lighthouse and museum. Call ahead to the lighthouse keeper regarding access, as heavy seas can make this site inaccessible. The lighthouse keeper's phone number is (707) 882-2777. From Highway 101 in Cloverdale, take Highway 128 west to Boonville. From Boonville, take Mountain View Road west to Highway 1, then turn south (left) toward Point Arena. Several miles north of Point Arena, turn north (right) onto Lighthouse Road. Drive to the lighthouse and check in with the superintendent or the duty lighthouse attendant. To access the site from the lighthouse, lift the upper rail of the fence that abuts the west side of the museum. Walk approximately 50 meters northwest to the top of the bluffs on the south side of the point at point Arena. Take the nearest safe route down to the rocks. Ropes may be necessary to get from the top of the bluff to the rocks below.

SITE DESCRIPTION - Mussels were collected from three discrete collections stations separated by approximately 5 meters along a northeast-southwest line, lying approximately 5 meters seaward from the base of the bluffs. Accessible collection locations were limited due to instability of the bluffs caused by heavy rains. This suggests that this site may not be accessible for future collections. This is a very exposed site, frequently hit by high waves. It requires great caution during sampling.

BIVALVE COLLECTIONS

1995 *Mytilus californianus* was abundant at this site. Collected organisms ranged in size from approximately 30-80 millimeters in shell length.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

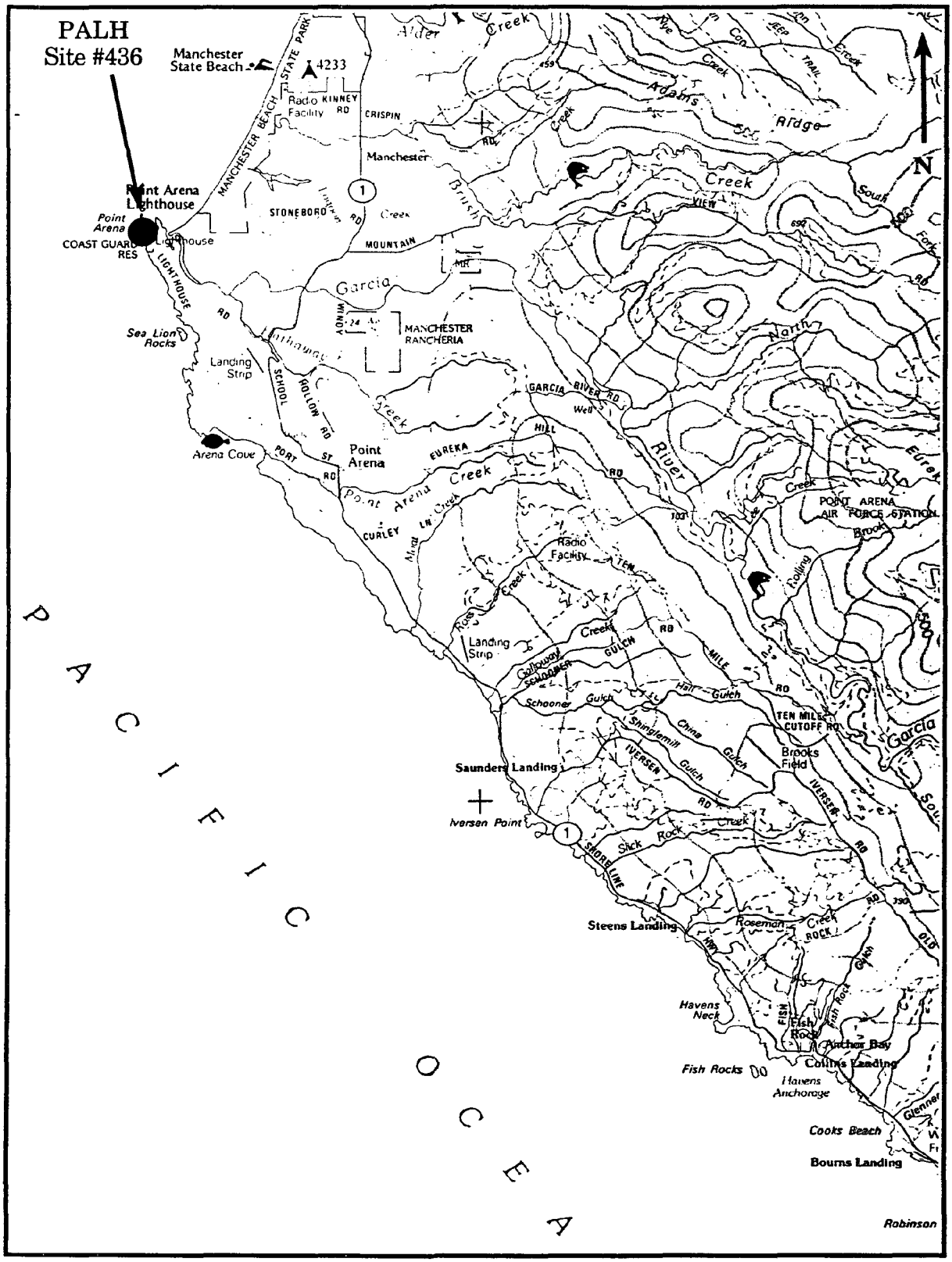
Bivalves - hand
Sediments - NA

WATER DEPTH - +1.0 m MLLW

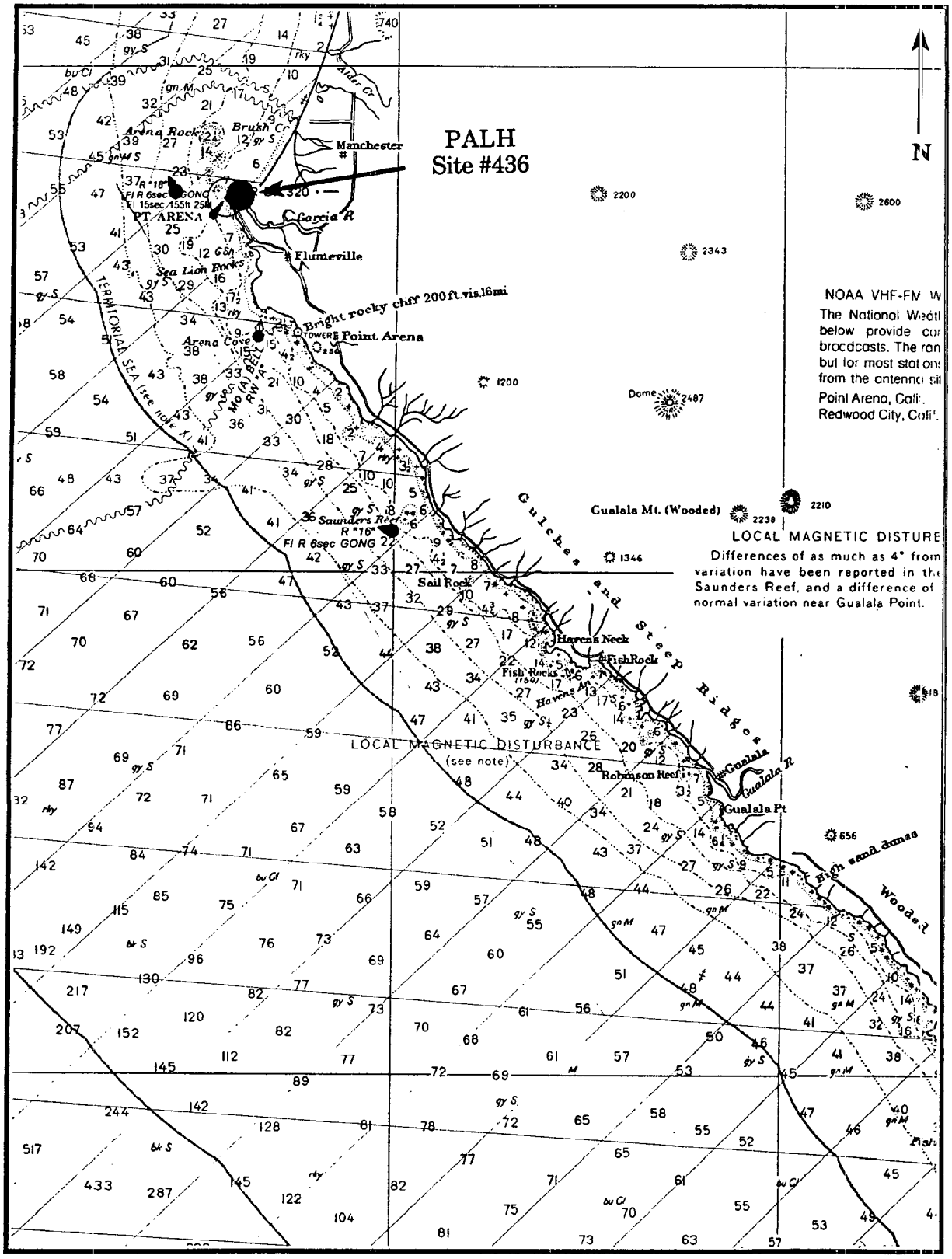
POSSIBLE CONTAMINANTS - The Garcia river flows into the ocean just north of Point Arena, though high levels of contaminants from the river are probably unlikely, as it drains an area with low population and little industry.

ENVIRONMENTAL DATA

Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	17.7	11.9	12 January 1995



Site #436 (PALH), Point Arena Point Arena Lighthouse.



Site #436 (PALH), Point Arena Point Arena Lighthouse (from chart 18640).

Site #436 (PALH), Point Arena Point Arena Lighthouse.

GERG SITE NUMBER - 437 **DESIGNATOR** - PDSC

SITE - SHELTER COVE, POINT DELGADA, CA

NOMINAL SITE CENTER - 40°01.35'N 124°04.40'W

LOCATED ON NOS CHART # - 18620

SITE ACCESS - The site is located in the coastal town of Shelter Cove, 23 miles west of Garberville. Take Highway 101 to Redway, just north of Garberville. Turn west onto Shelter Cove Road. At the end of Shelter Cove Road turn left (southeast) onto Upper Pacific Drive. Follow the road as it bends to the south past the marina and turn right (west) onto Lower Pacific Drive. Take the second left onto Coral Point Road. Park at the end of the cul-de-sac nearest the shore. Follow the path that leads to a rocky beach/cove.

SITE DESCRIPTION - This site is a large reef approximately the size of a football field, with extensive mussel beds. The site center is approximately 50 meters west of the trail down to the beach from the parking area and is not defined by a specific topographic feature. Discrete collection stations were the site center, and two other stations approximately 10 meters north and south of the site center.

BIVALVE COLLECTIONS

1995 *Mytilus californianus* was very abundant at this site. Collected organisms ranged from approximately 40-80 millimeters in shell length.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

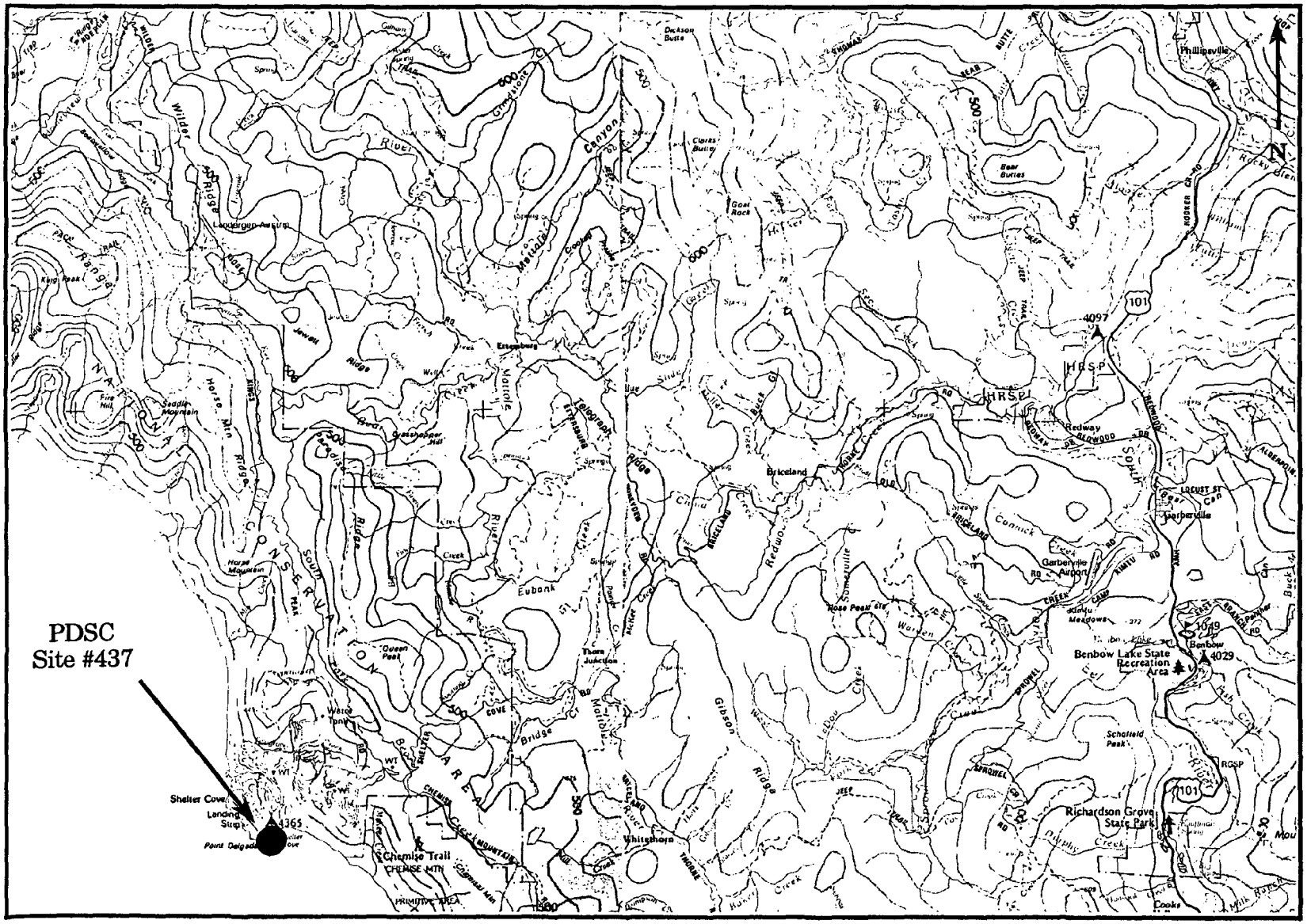
Bivalves - hand
Sediments - NA

WATER DEPTH - +1.75 m MLLW

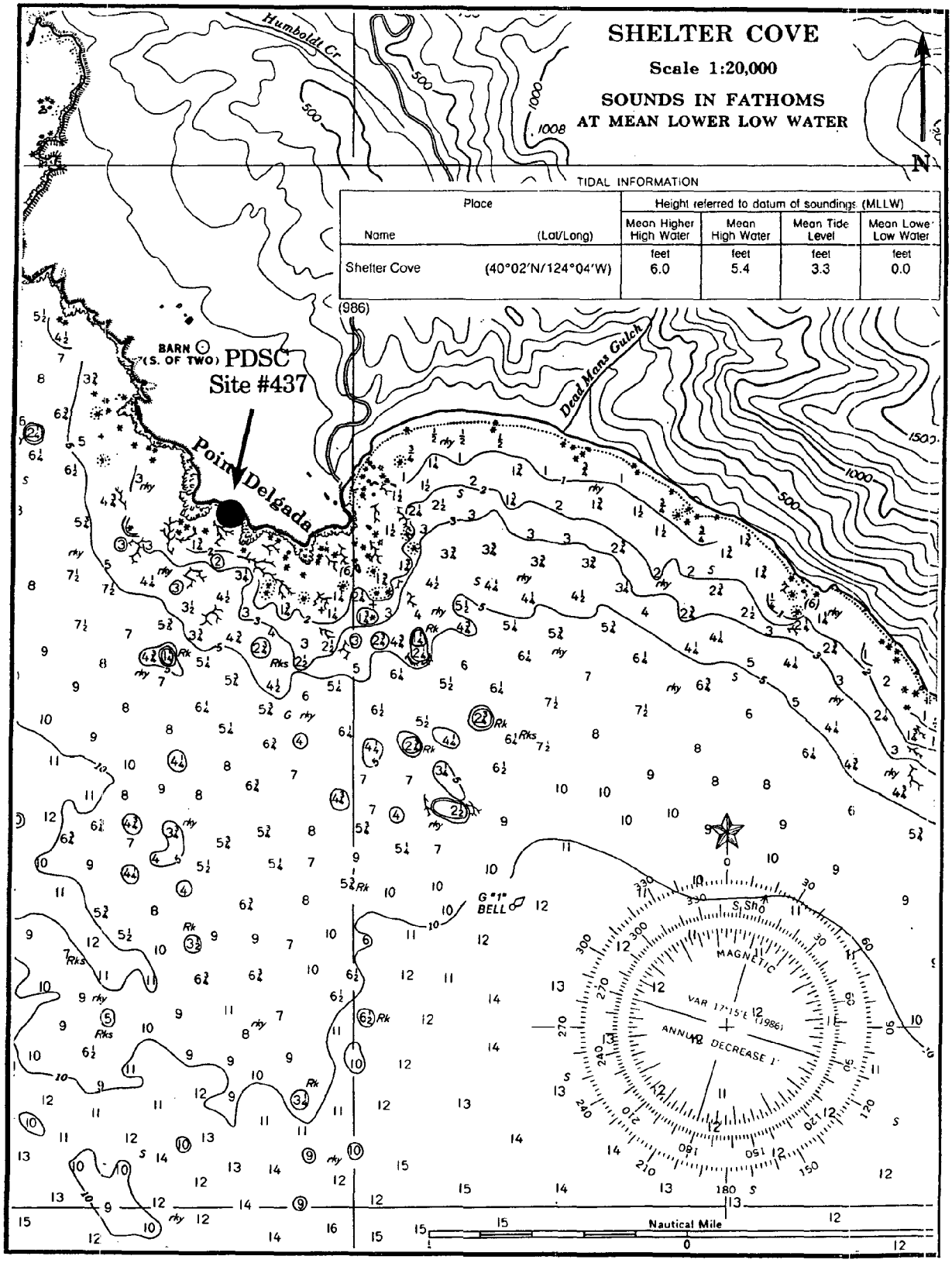
POSSIBLE CONTAMINANTS - There were no obvious nearby sources of contaminants.

ENVIRONMENTAL DATA

Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	20.7	10.8	29 December 1994

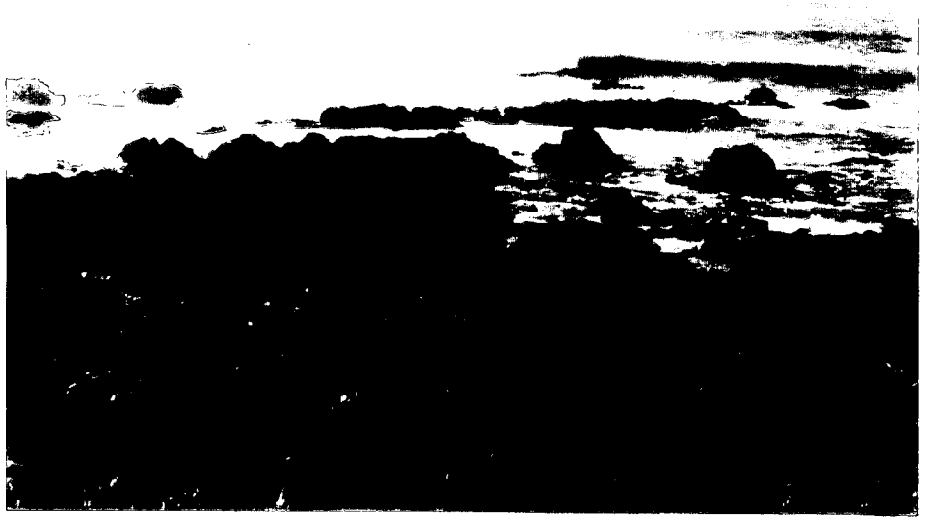


Site #437 (PDSC), Point Delgada Shelter Cove.



Site #437 (PDSC), Point Delgada Shelter Cove (from chart 18620).

Site #437 (PDSC), Point Delgada Shelter Cove.



GERG SITE NUMBER - 438 **DESIGNATOR** - HMBJ

SITE - HUMBOLDT BAY JETTY, EUREKA, CA

NOMINAL SITE CENTER - 40°45. 85'N 124°24.02'W

LOCATED ON NOS CHART # - 18622

SITE ACCESS - This site is on north jetty at the mouth of Humboldt Bay near Eureka. From Highway 101 in Eureka, take Highway 255 west over the Samoa Bridge to the Samoa Peninsula. Turn left (south) at the west end of the bridge, and drive into the Coast Guard station (approximately 3 miles south of bridge). Inside the Coast Guard station, bear to the right and proceed to the gravel parking lot nearest the landward end of the north jetty. From the parking lot, walk approximately 1/2 mile to the base of the jetty. Use of a four-wheel drive vehicle allows much closer access to this site, as it is possible to drive across the sand and up onto the jetty itself. Once on the jetty, proceed with caution towards the seaward end.

SITE DESCRIPTION - The site center is a large boulder approximately 200 meters landward from the seaward end of the jetty, on the jetty's ocean (north) side. The site center is approximately 50 meters landward (northeast) of the most landward doloes (doloes are the large jack-shaped concrete structures placed around the seaward end of the jetty to reinforce the jetty's structure). The boulder that identifies the site center is the largest and farthest north of the boulders that comprise an extensive tide-pool area on the ocean side of the jetty. The middle discrete collection station was the site center and the two other discrete stations were 10 meters east and west of the site center. This site is very exposed, and the jetty is frequently washed by high waves, so collections require extreme caution.

BIVALVE COLLECTIONS

1995 *Mytilus californianus* was abundant at this site. Collected organisms ranged in size from approximately 40-90 millimeters in shell length.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

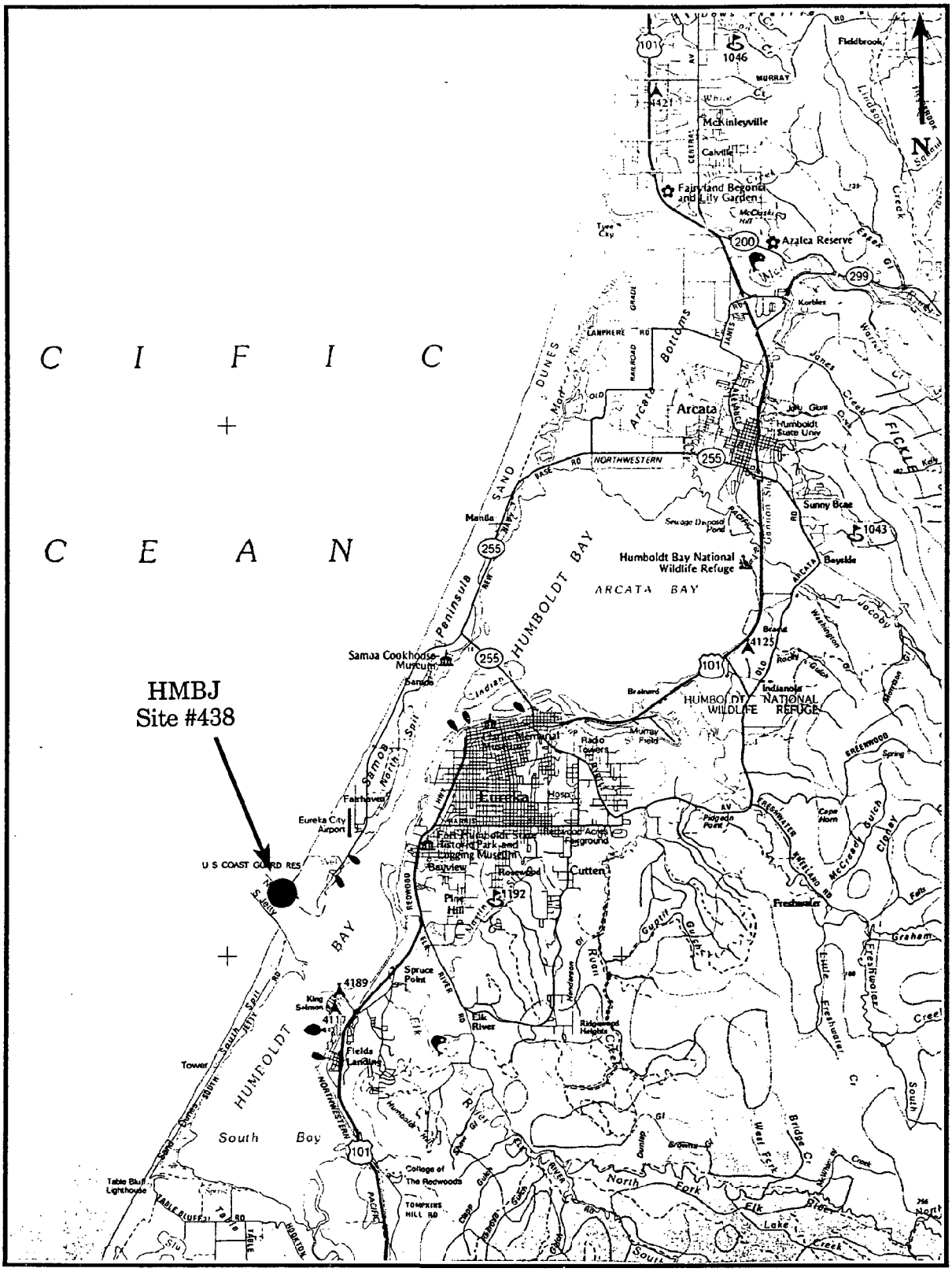
Bivalves - hand
Sediments - NA

WATER DEPTH - +1.5 m MLLW

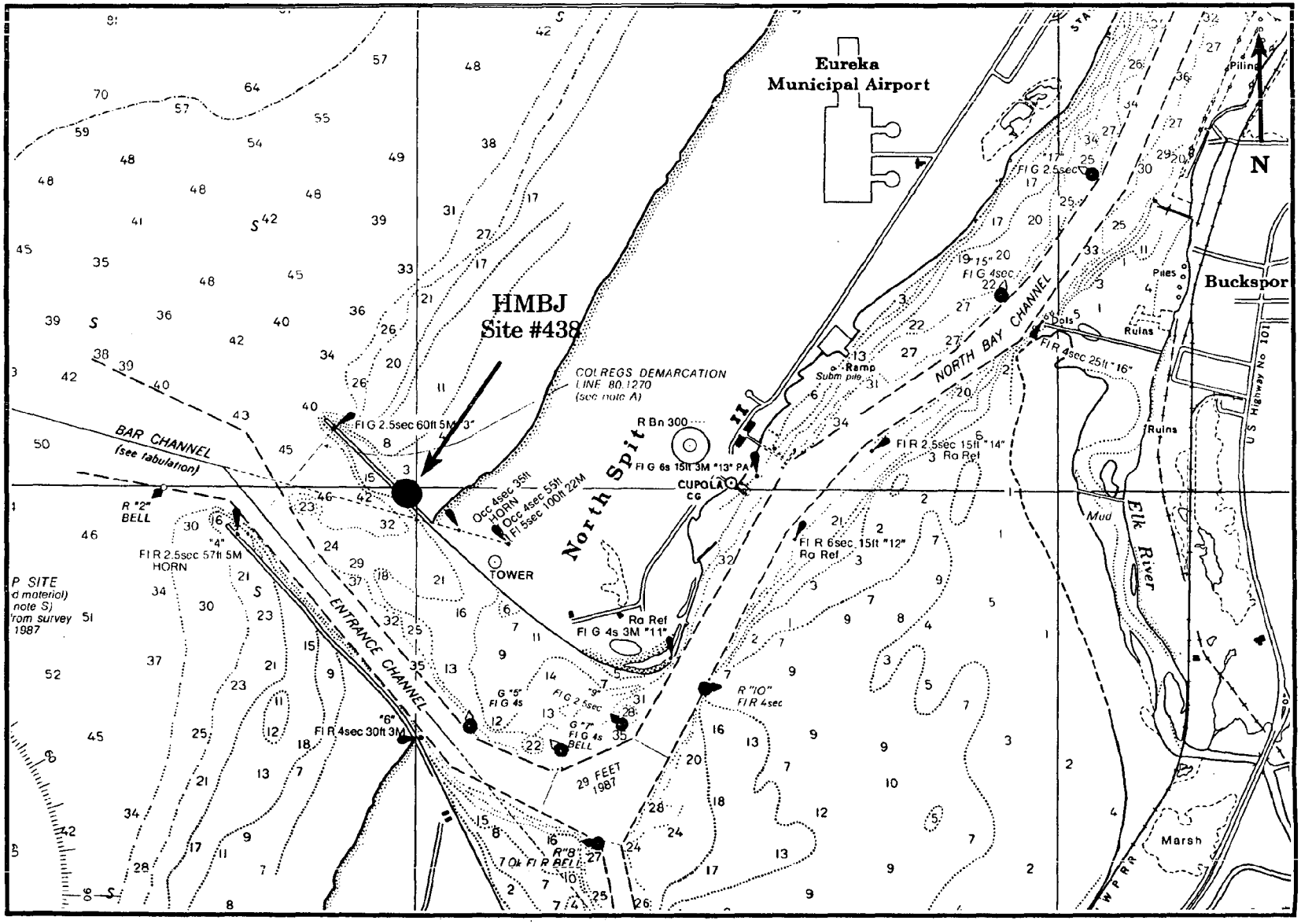
POSSIBLE CONTAMINANTS - This site is near the outfall of a large pulp mill, and several hundred meters north of the entrance to Humboldt Bay.

ENVIRONMENTAL DATA

Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	20.3	10.9	28 December 1994



Site #438 (HMBJ), Eureka Humboldt Bay Jetty.



Site #438 (HMBJ), Eureka Humboldt Bay Jetty (from chart 18622).

Sitc #438 (HMBJ), Eureka Humboldt Bay Jetty.

GERG SITE NUMBER - 439 **DESIGNATOR** - EUSB

SITE - SAMOA BRIDGE, EUREKA, CA

NOMINAL SITE CENTER - 40°49.29'N 124°10.28'W

LOCATED ON NOS CHART # - 18622

SITE ACCESS - This site is located on the Samoa Bridge across Humboldt Bay in Eureka. It is only accessible by boat. Launch a boat from the Eureka small boat basin ramp, at the foot of Commercial Street in Eureka. Head west across the bay towards the Samoa peninsula. In the Samoa Channel, head north and proceed toward the third (westernmost) arch of the bridge.

SITE DESCRIPTION - The site center is the second bridge support west of the center of the westernmost arch of the Samoa Bridge. The center of the arch is identified by a small green navigation light hanging down from the bridge. Counting from the center of the arch towards the west, the first, second, and third bridge supports comprise the discrete collection stations.

BIVALVE COLLECTIONS

1995 Both *Mytilus californianus* and *Mytilus edulis* were present at this site, although neither species was abundant. Each bridge support had clumps of mussels situated at and below MLLW. These clumps were composed of approximately 10-100 very large (80-220 millimeters in shell length) *M. californianus* , and, interspersed among the large *M. californianus*, were small groups (1-5 individuals, 30-80 millimeters in shell length) of *M. edulis*. Both species were collected.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

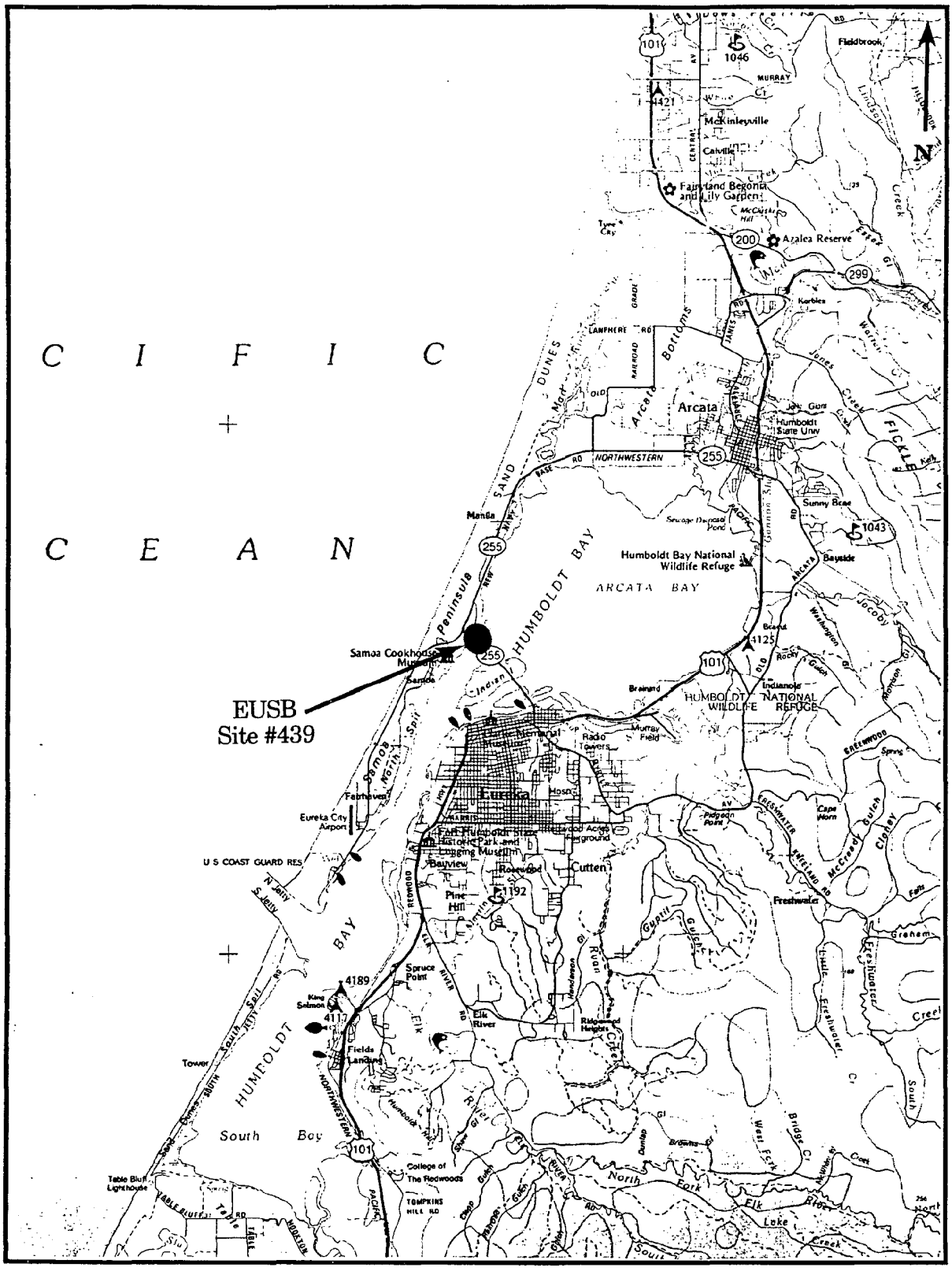
Bivalves - hand
Sediments - NA

WATER DEPTH - +0.25 m MLLW

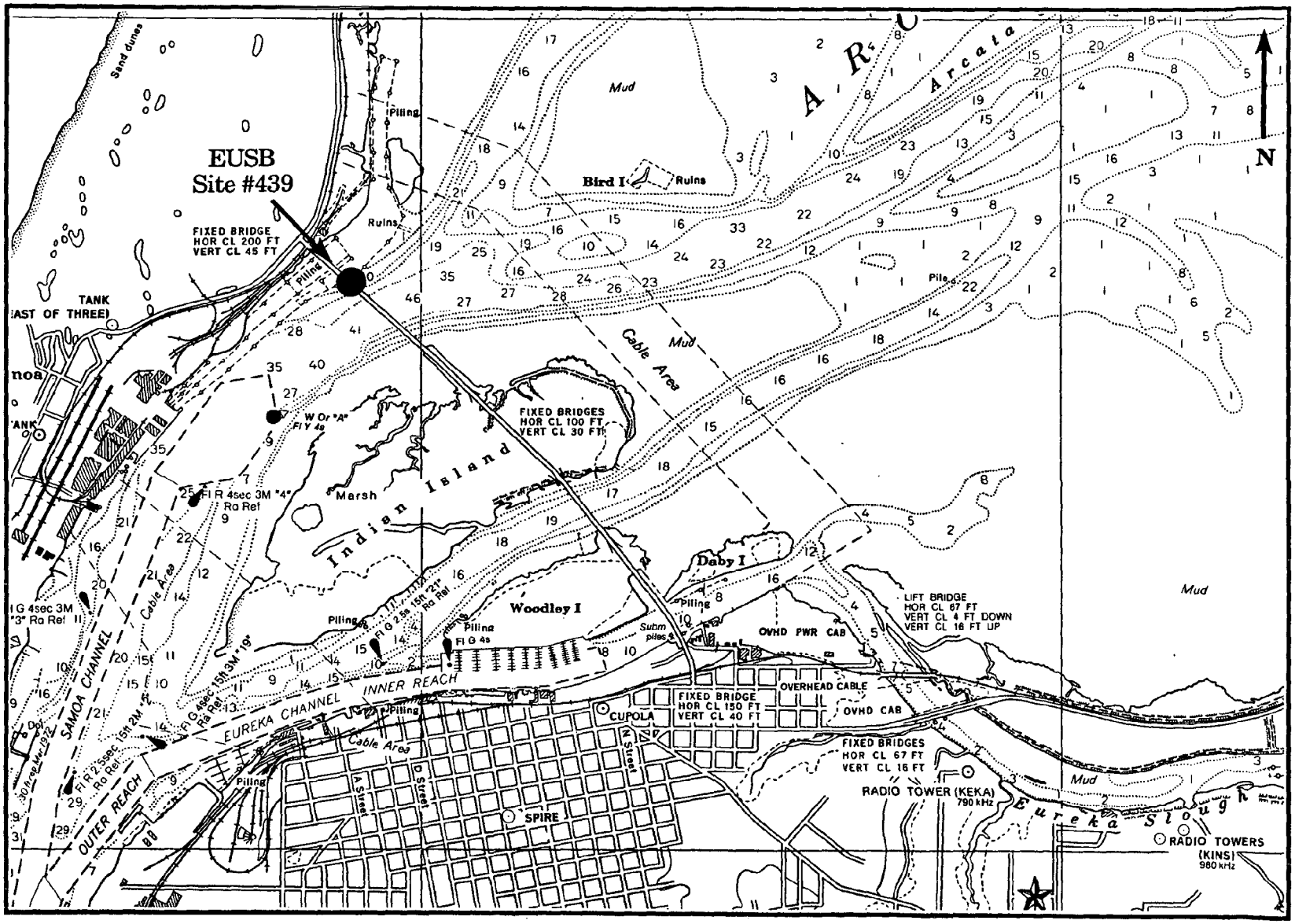
POSSIBLE CONTAMINANTS - In addition to urban and agricultural (dairy) runoff into Humboldt Bay, there are several pulp and timber mills operating nearby, and a medium-sized fishing industry is also located in the bay. Humboldt Bay also supports a growing petrochemical and timber shipping industry.

ENVIRONMENTAL DATA

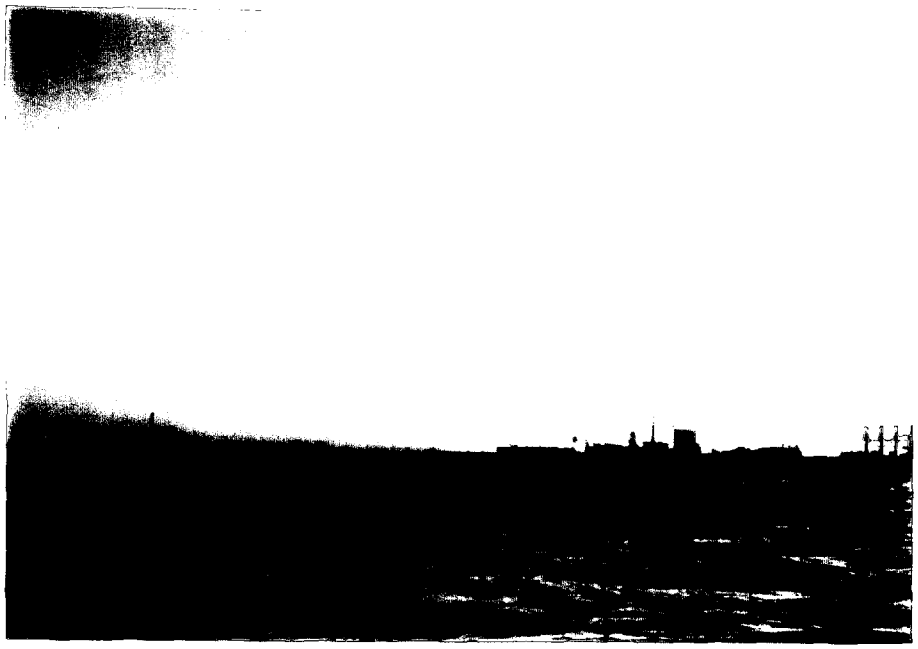
Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	19.2	9.8	28 December 1994

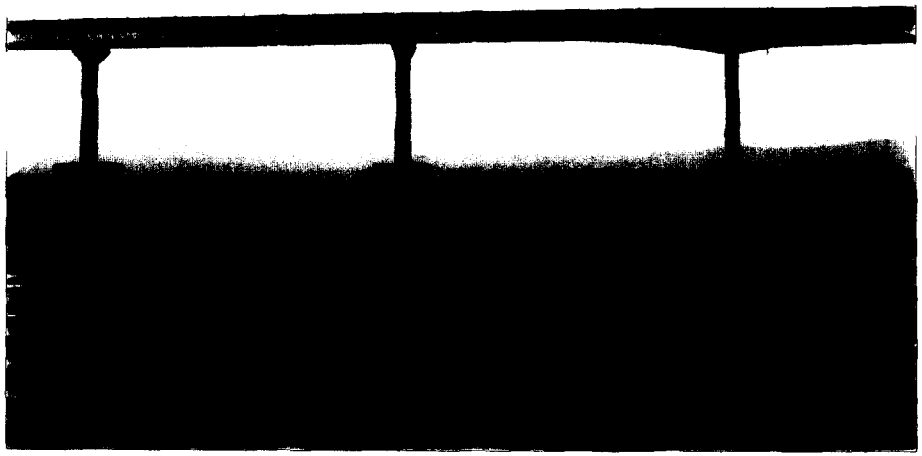


Site #439 (EUSB), Eureka Samoa Bridge.

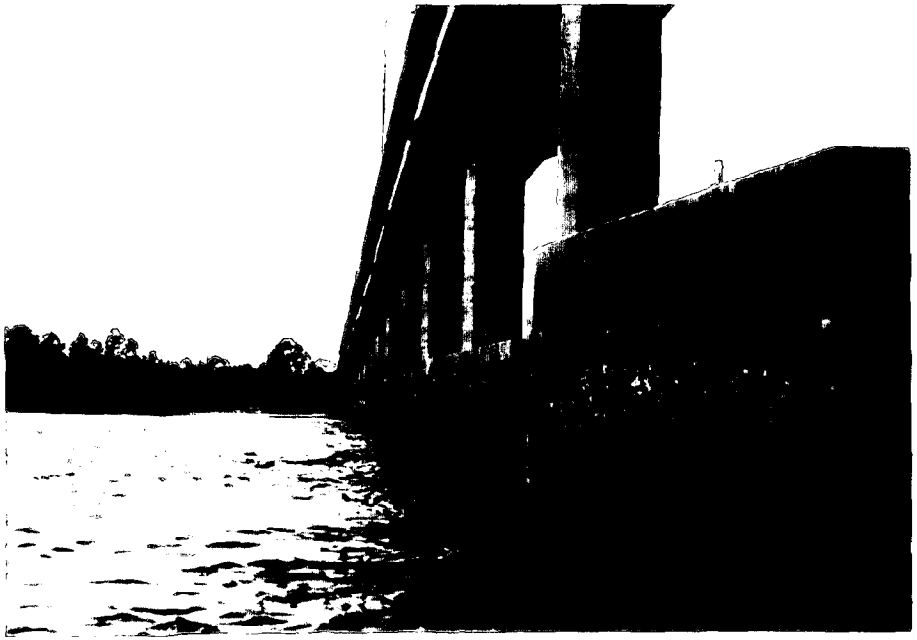


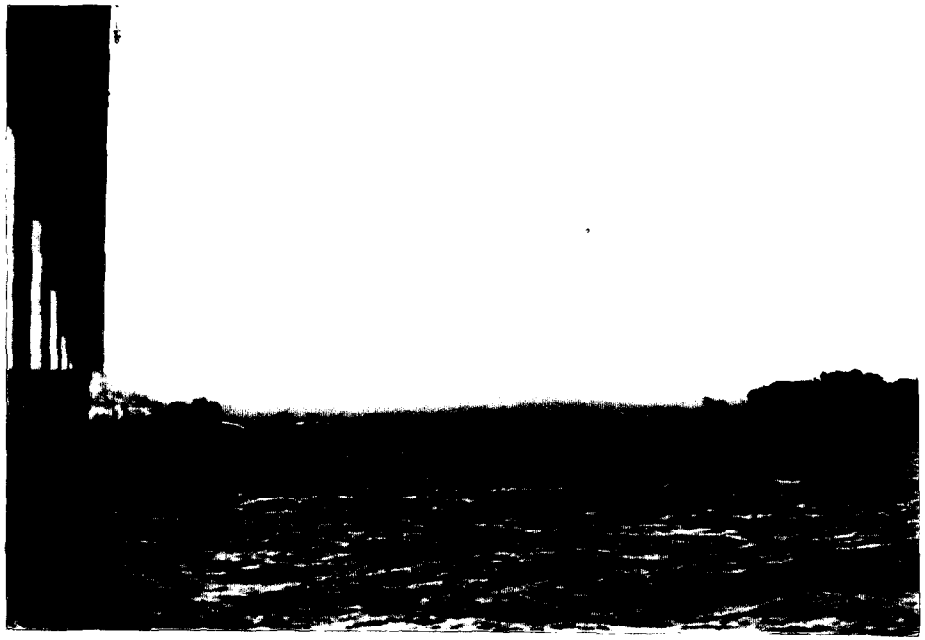
Site #439 (EUSB), Eureka Samoa Bridge (from chart 18622).





Site #439 (EUSB), Eureka Samoa Bridge.





GERG SITE NUMBER - 441 **DESIGNATOR** - SGSG

SITE - POINT SAINT GEORGE, CRESCENT CITY, CA

NOMINAL SITE CENTER - 41°44.87'N 124°12.46'W

LOCATED ON NOS CHART # - 18603

SITE ACCESS - This site is located 3 nautical miles south of Point Saint George, and 0.25 nautical miles north of Battery Point near Crescent City. From Highway 101 in Crescent City, turn west onto Fifth Street. Take Fifth Street to where it ends at the intersection of Taylor Street and park. Walk down the stairway to the beach. From the foot of the stairs, walk approximately 250 meters at a heading of 200° to the large peaked rock.

SITE DESCRIPTION - The site center is the south side of the large peaked rock. Collections were made from three discrete collection stations, with the middle station being at the site center, and the other two stations being approximately 10 meters east and west of the middle station. This is a very exposed site that is frequently hit by large waves. Extreme caution should be exercised when collecting here.

BIVALVE COLLECTIONS

1995 *Mytilus californianus* was abundant at this site. Collected organisms ranged from approximately 30-80 millimeters in shell length.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

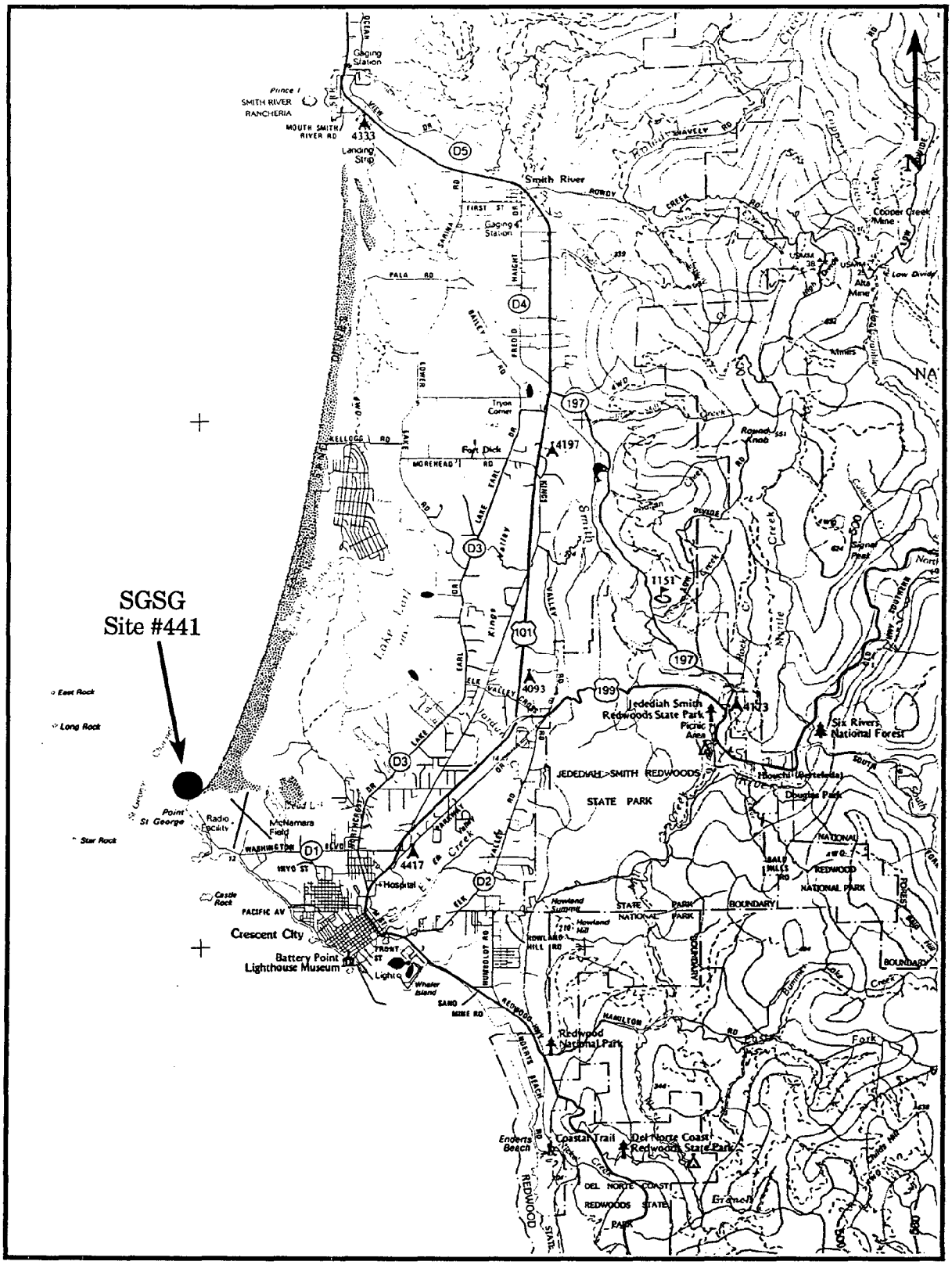
Bivalves - hand
Sediments - NA

WATER DEPTH - +1.75 m MLLW

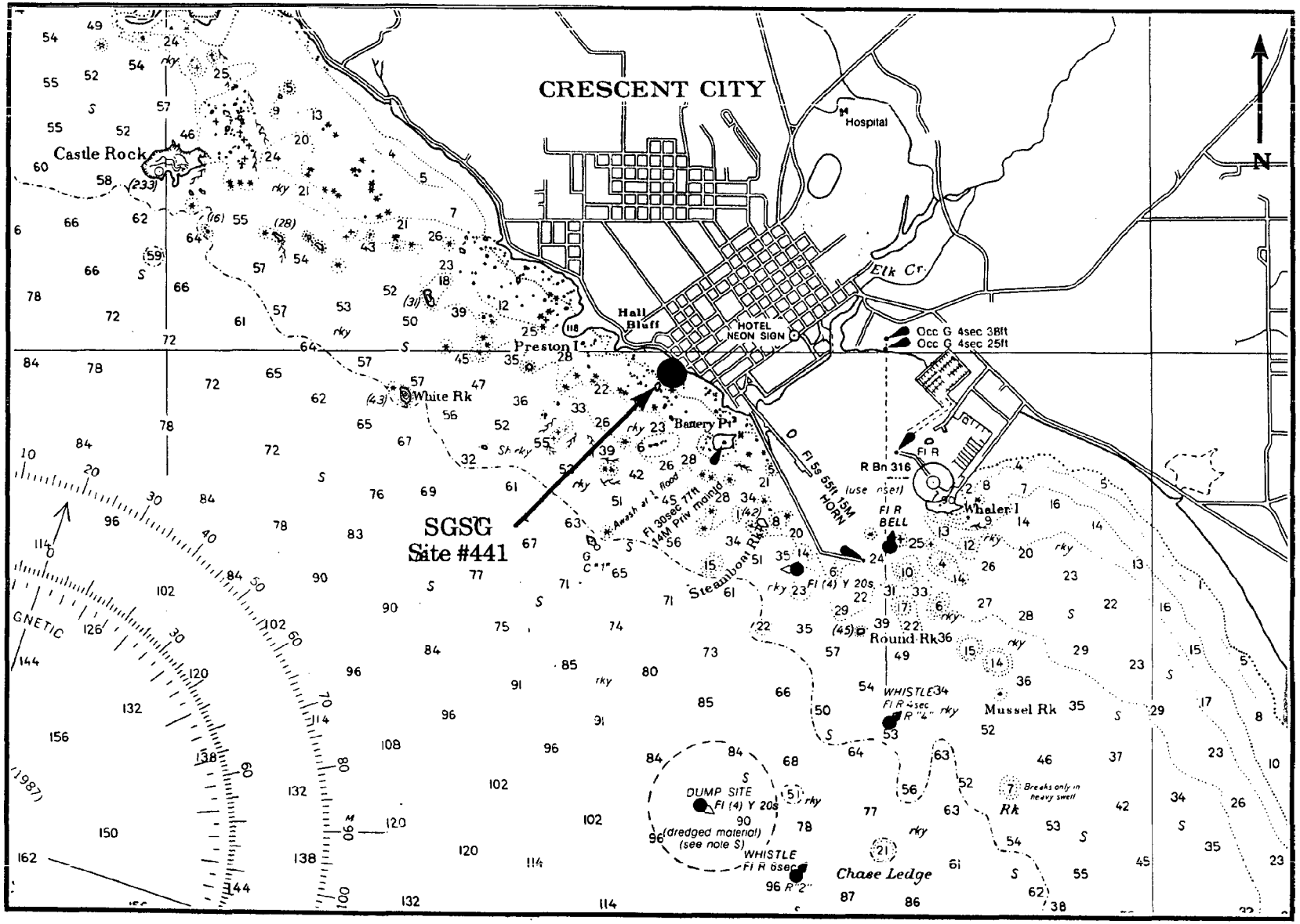
POSSIBLE CONTAMINANTS - Urban runoff from the small city of Crescent City may be the largest possible source of contaminants at this site. Other than a medium-sized commercial fishing industry, the surrounding area is not heavily industrialized.

ENVIRONMENTAL DATA

Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	20.3	10.2	30 December 1994



Site #441 (SGSG), Crescent City Point Saint George.



Site #441 (SGSG), Crescent City Point Saint George (from chart 18603).

Site #441 (SGSG), Crescent City Point Saint George.

OREGON SITES

GERG SITE NUMBER - 443 **DESIGNATOR** - CBRP

SITE - RUSSELL POINT, COOS BAY, OR

NOMINAL SITE CENTER - 43°25.59'N 124°13.17'W

LOCATED ON NOS CHART # - 18587

SITE ACCESS - This site is located on the Highway 101 bridge across Coos Bay. Access is via private property, unless the site is accessed by boat. The property owner's name and address is: Mr. Dennis Smith, #40 East Bay Drive, North Bend, OR. (503) 756-4413. He should be called prior to making collections for permission to cross his property. To reach the site, turn east onto East Bay Drive, just north of the Highway 101 bridge over Coos Bay (connecting Russell Point to North Point). On East Bay Drive, turn right onto the first private driveway and park near Mr. Smith's house.

SITE DESCRIPTION - At this site, mussels were found in a single small patch, hanging upside down from the bottom of the center section of the sixth bridge support, counting from the north end of the bridge (approximately 150 meters south of the north end of the bridge). No farther than the seventh bridge support was accessible without a boat, and mussels were not present on the seventh support. Consequently, collections were pooled from the sixth support, without designating three discrete collection stations. The target location (i.e., the eight, ninth, and tenth bridge supports) was not accessible without a boat.

BIVALVE COLLECTIONS

1995 *Mytilus edulis* was collected from this site, although it was uncommon. Collected organisms ranged from approximately 35-40 millimeters in shell length. Oysters (*Crassostrea gigas)* were also present, but uncommon, at this site.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

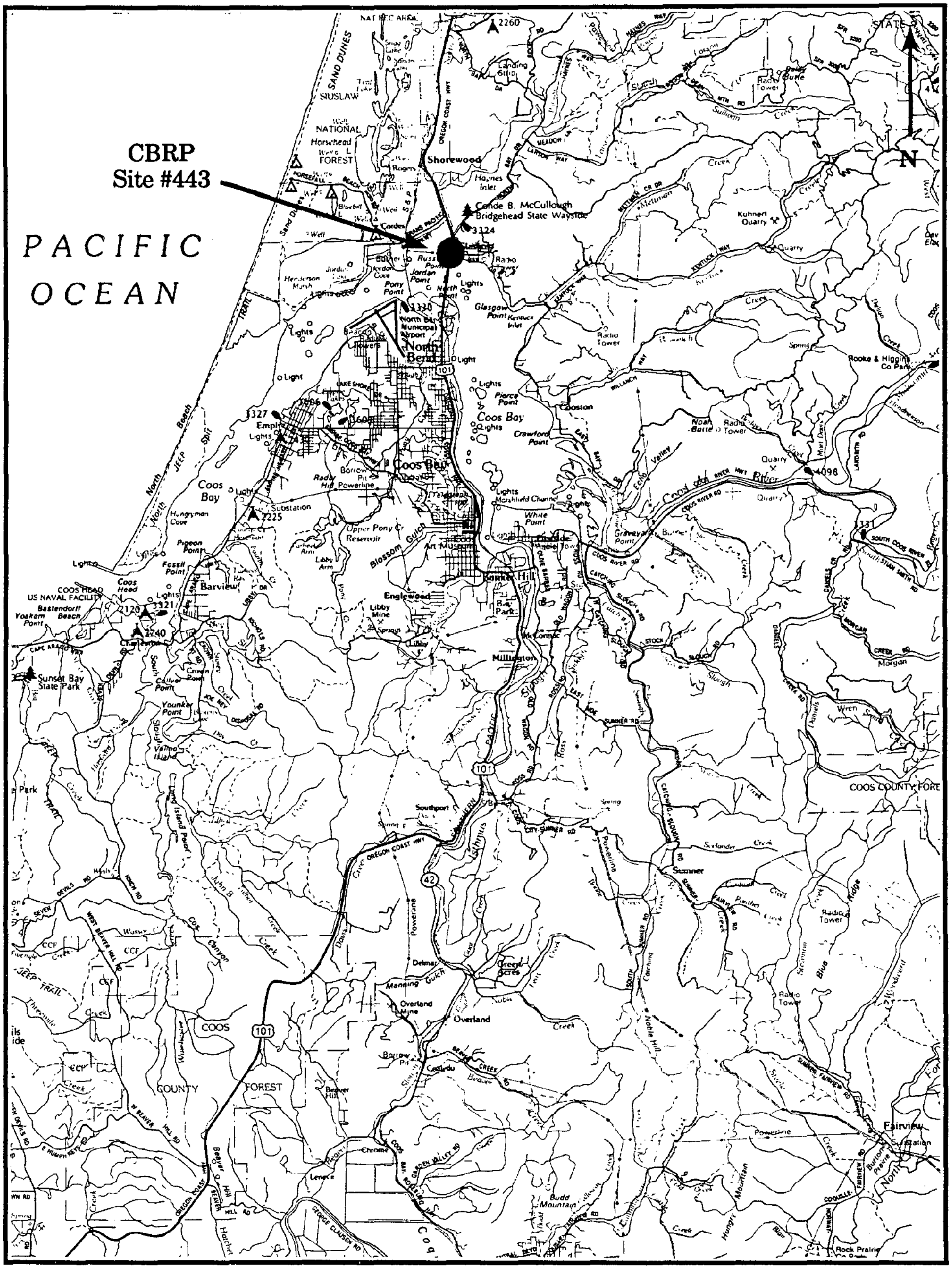
Bivalves - hand
Sediments -NA

WATER DEPTH - +0.5 m MLLW

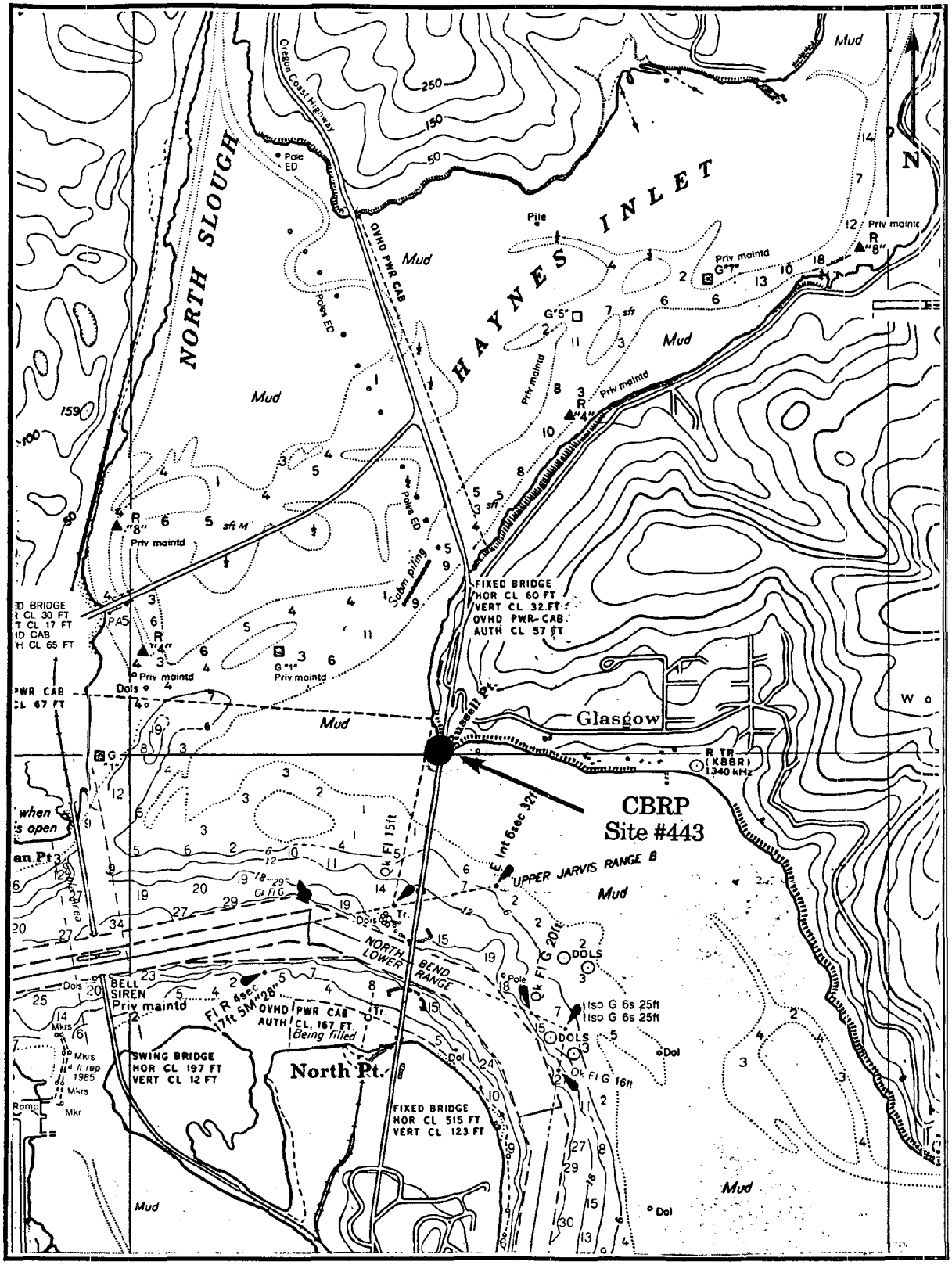
POSSIBLE CONTAMINANTS - Coos Bay has moderately developed lumber and fishing industries. Also, the bridge itself is a potential point source of contaminants such as paint and metals.

ENVIRONMENTAL DATA

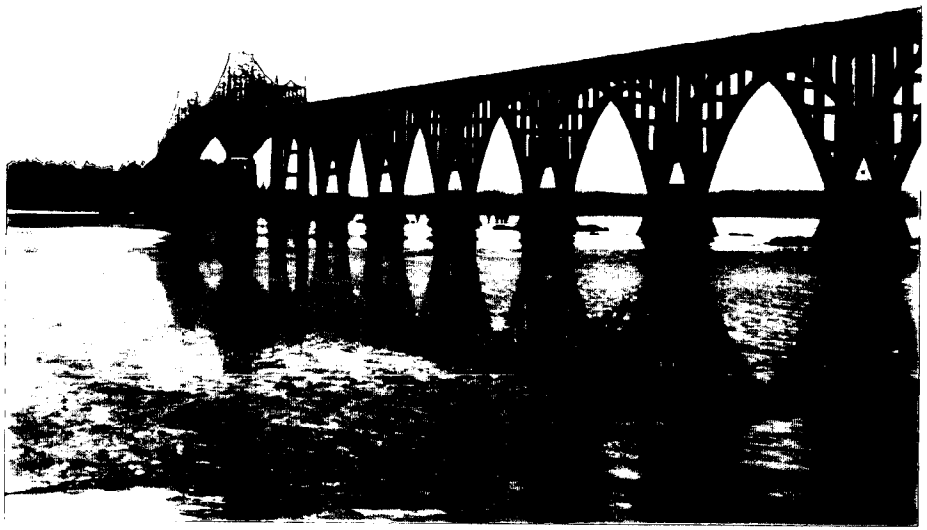
Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	15.0	7.9	12 December 1994



Site #443 (CBRP), Coos Bay Russel Point.



Site #443 (CBRP), Coos Bay Russel Point (from chart 18587).



Site #443 (CBRP), Coos Bay Russel Point.

GERG SITE NUMBER - 444 **DESIGNATOR** - YBOP

SITE - ONEATTA POINT, YAQUINA BAY, OR

NOMINAL SITE CENTER - 44°34.51'N 123°59.34'W

LOCATED ON NOS CHART # - 18581

SITE ACCESS - Mussels from this site are acquired from the Oregon Oyster Company, Inc., 6878 Yaquina Bay Road, located on the north side of Yaquina Bay, approximately 7 miles east of Newport. Turn east from Highway 101 onto Yaquina Bay Road at the southern end of Newport, just north of the Highway 101 bridge over Yaquina Bay. Call ahead [(503) 265-5078, Monday-Saturday 7:00–4:30; Manager, Lou Ann Oak], to insure that oysters are being harvested, otherwise mussels may be unavailable.

SITE DESCRIPTION - Mussels occur at this site through natural settlement onto commercially grown oysters. The oysters are cultured in mesh bags placed in floating wooden racks, which means that these mussels are never exposed to the atmosphere at low tide. The mussels are discarded into large bins along with empty oyster shells as the oysters are harvested and processed. Collections were made from mussels that had been removed from the water within a few hours.

BIVALVE COLLECTIONS

1995 *Mytilus edulis* was abundant at this site. Collected organisms ranged from approximately 35–50 millimeters in shell length. Cultured *Crassostrea gigas* and *Ostrea lurida* were also abundant at this site.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

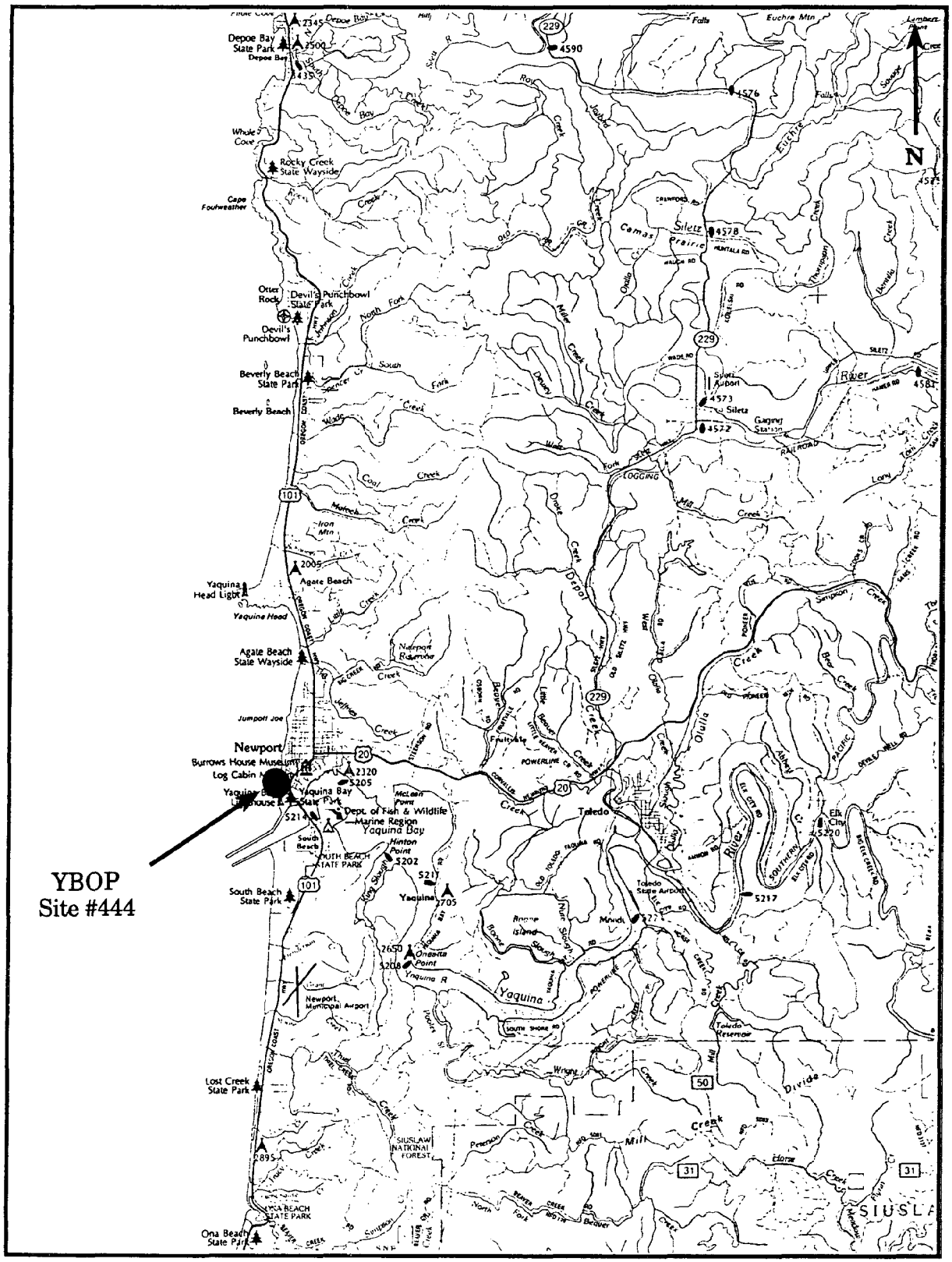
Bivalves - hand
Sediments - NA

WATER DEPTH - Not applicable, see site description.

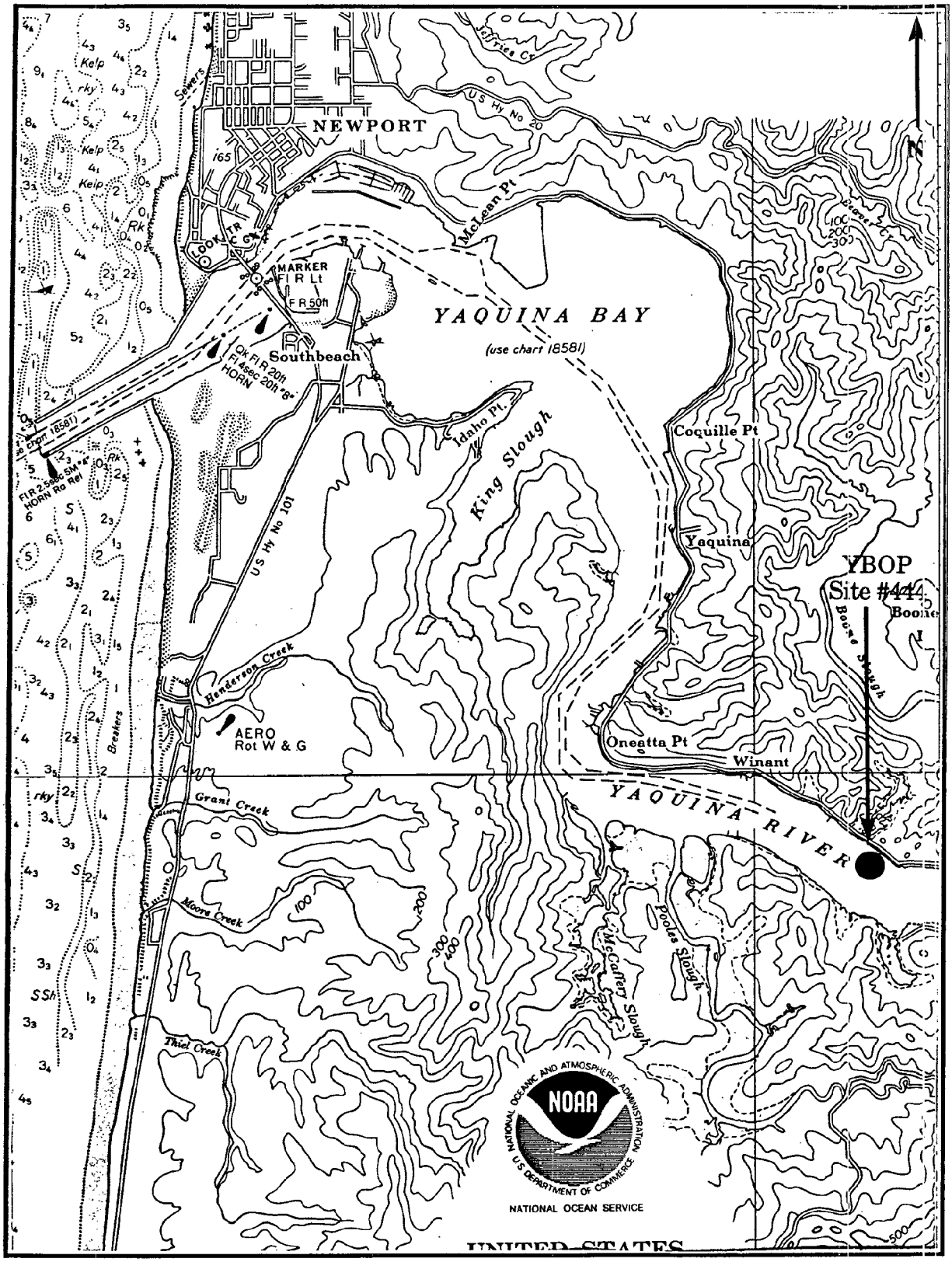
POSSIBLE CONTAMINANTS - Yaquina Bay is neither heavily populated nor industrialized. Nevertheless, Newport is a major commercial fishing center, suggesting that boats and the associated industries may provide sources of possible contaminants.

ENVIRONMENTAL DATA

Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	14.7	7.5	13 December 1994



Site #444 (YBOP), Yaquina Bay Oneatta Point.



Site #444 (YBOP), Yaquina Bay Oneatta Point (from chart 18561).

Site #444 (YBOP), Yaquina Bay Oneatta Point.

GERG SITE NUMBER - 446 **DESIGNATOR** - YHFC

SITE - FOGARTY CREEK, YAQUINA BAY, OR

NOMINAL SITE CENTER - 44°50.22'N 124°03.12'W

LOCATED ON NOS CHART # - 18561

SITE ACCESS - This site is located adjacent to the mouth of Fogarty Creek near Yaquina Head. It is an open-coast site, not actually on Yaquina Bay as the name suggests. Fogarty Creek empties into the ocean approximately 2 miles north of the town of Depoe Bay, which is approximately 20 miles north of Newport. Take Highway 101 to the Fogarty Creek State Park parking lot located on the east side of Highway 101. From the parking lot, follow the signs to the beach. The trail to the beach runs along the south side of Fogarty Creek, and crosses under the Highway 101 bridge over the creek. From the trail under the southwest corner of the bridge, the site is approximately 300 meters west-southwest.

SITE DESCRIPTION - The site center is a large tide pool on the west side of a large group of rocks located at the water's edge just south of where Fogarty Creek runs into the ocean (this may change over time). Collections were made from three discrete stations. The middle station was at the site center and two other discrete stations were located approximately 10 meters north and south of the middle station. The previously used coordinates suggested that the site was several hundred meters northwest (underwater) from where collections were made. The site center reported here was on the closest mussel-bearing rocks to the previous coordinates.

BIVALVE COLLECTIONS

1995 *Mytilus californianus* was abundant at this site. Collected organisms ranged from approximately 40-70 millimeters in shell length. This site is very exposed and would be hazardous during heavy surf conditions.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

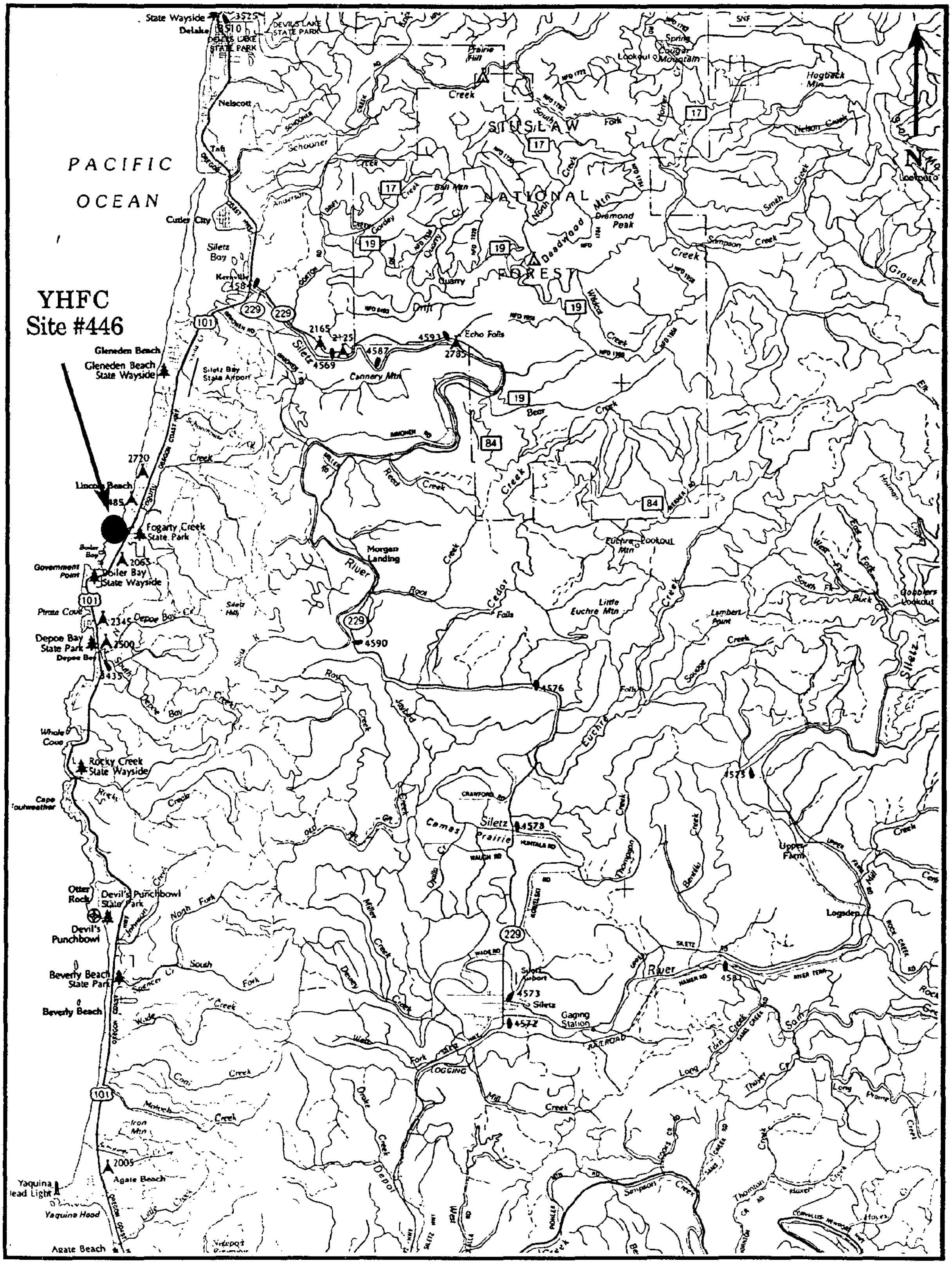
Bivalves - hand
Sediments -NA

WATER DEPTH - +1.5 m MLLW

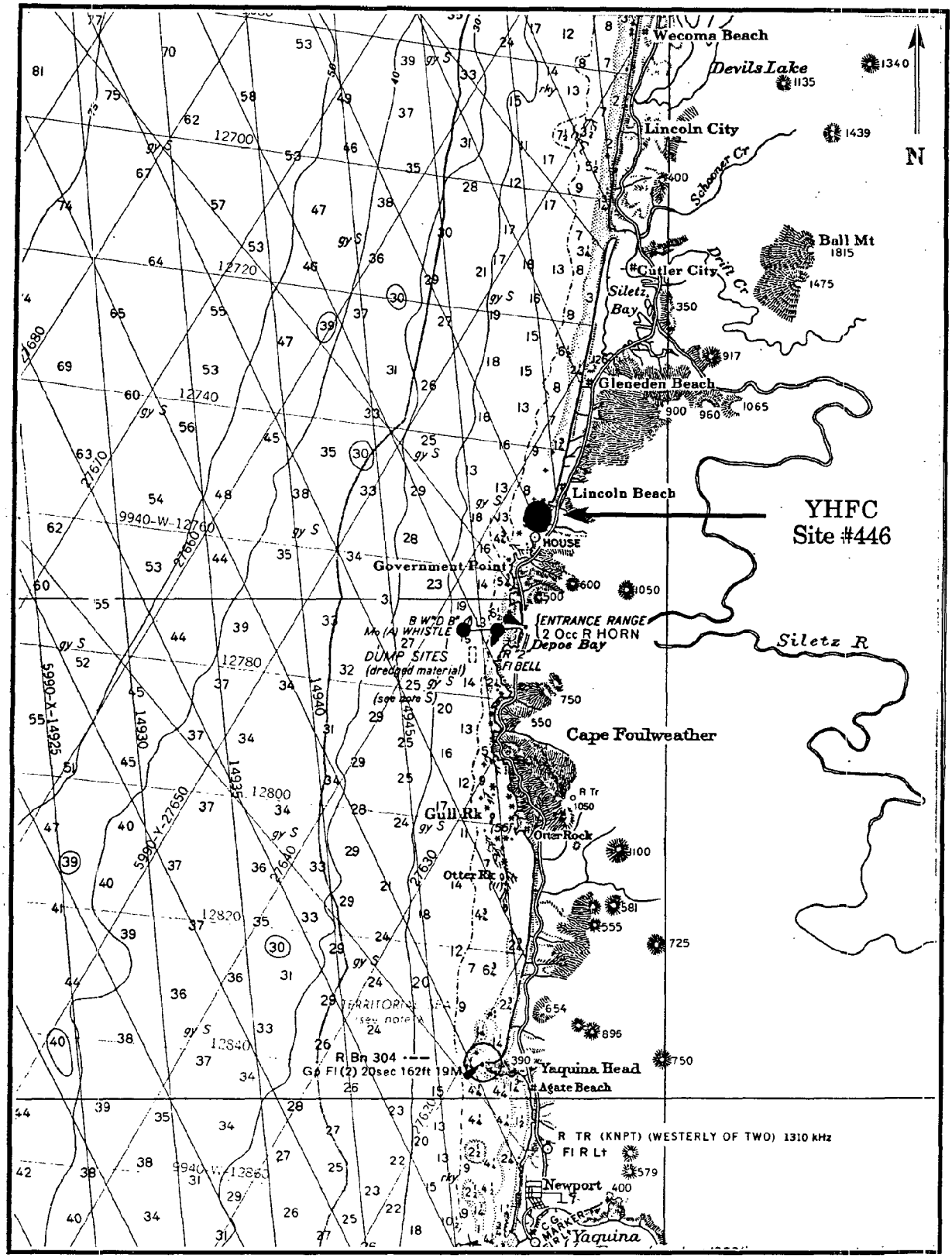
POSSIBLE CONTAMINANTS - No nearby sources of possible contaminants were observed at this site, although Fogarty Creek may contain dairy-farm and other agricultural runoff.

ENVIRONMENTAL DATA

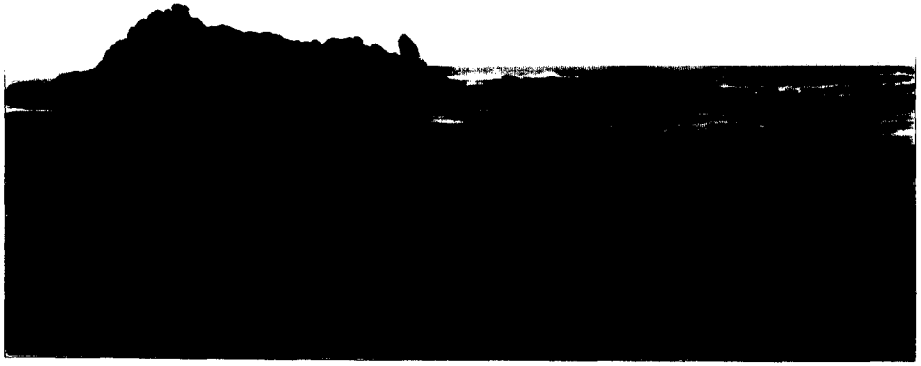
Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	29.0	8.9	13 December 1994



Site #446 (YHFC), Yaquina Bay Fogarty Creek.



Site #446 (YHFC), Yaquina Bay Fogarty Creek (from chart 18520).



Site #446 (YHFC), Yaquina Bay Fogarty Creek.

GERG SITE NUMBER - 447 **DESIGNATOR** - TBHP

SITE - HOBSONVILLE POINT, TILLAMOOK BAY, OR

NOMINAL SITE CENTER - 45°32.83'N 123°54.45'W

LOCATED ON NOS CHART # - 18558

SITE ACCESS - This site is located a few hundred meters southwest of the Hobsonville Point Historic Marker, which is approximately 4 miles south of the town of Garibaldi, Oregon, adjacent to Highway 101. Park in the gravel lot on the west side of Highway 101, in view of the Point of Historic Interest marker. Take the trail southwest approximately 200 meters to the southwest tip of Hobsonville Point.

SITE DESCRIPTION - The site center is the southwest tip of Hobsonville Point. Because the mussels were sparse at this site, discrete collection stations were not designated. Mussels were collected from concrete boulders located within approximately 15 meters of the site center.

BIVALVE COLLECTIONS

1995 *Mytilus edulis* was somewhat sparse at this site. Collected organisms ranged from 30-40 millimeters in shell length, and were heavily fouled by barnacles.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

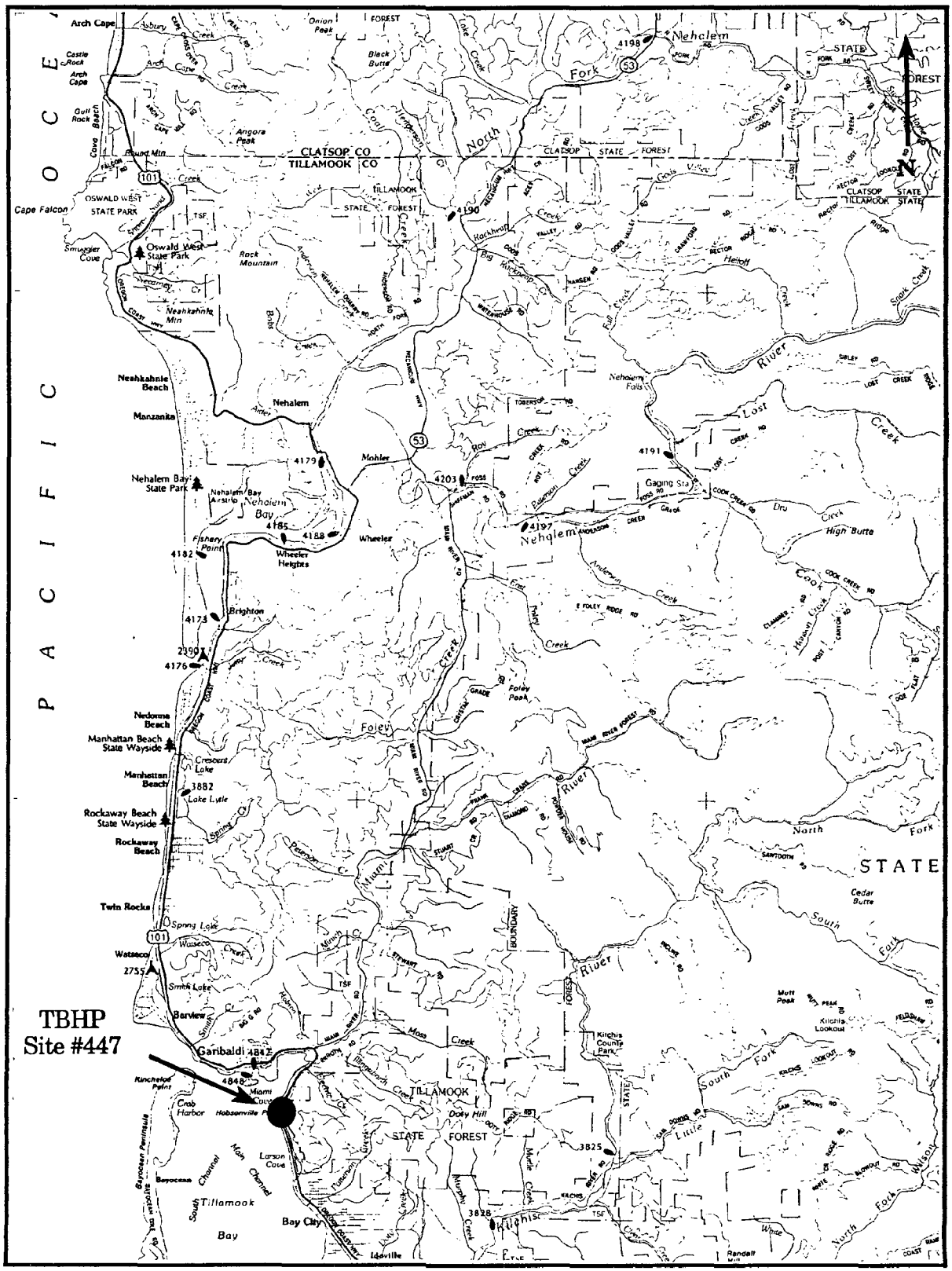
Bivalves - hand
Sediments - NA

WATER DEPTH - +1.0 m MLLW

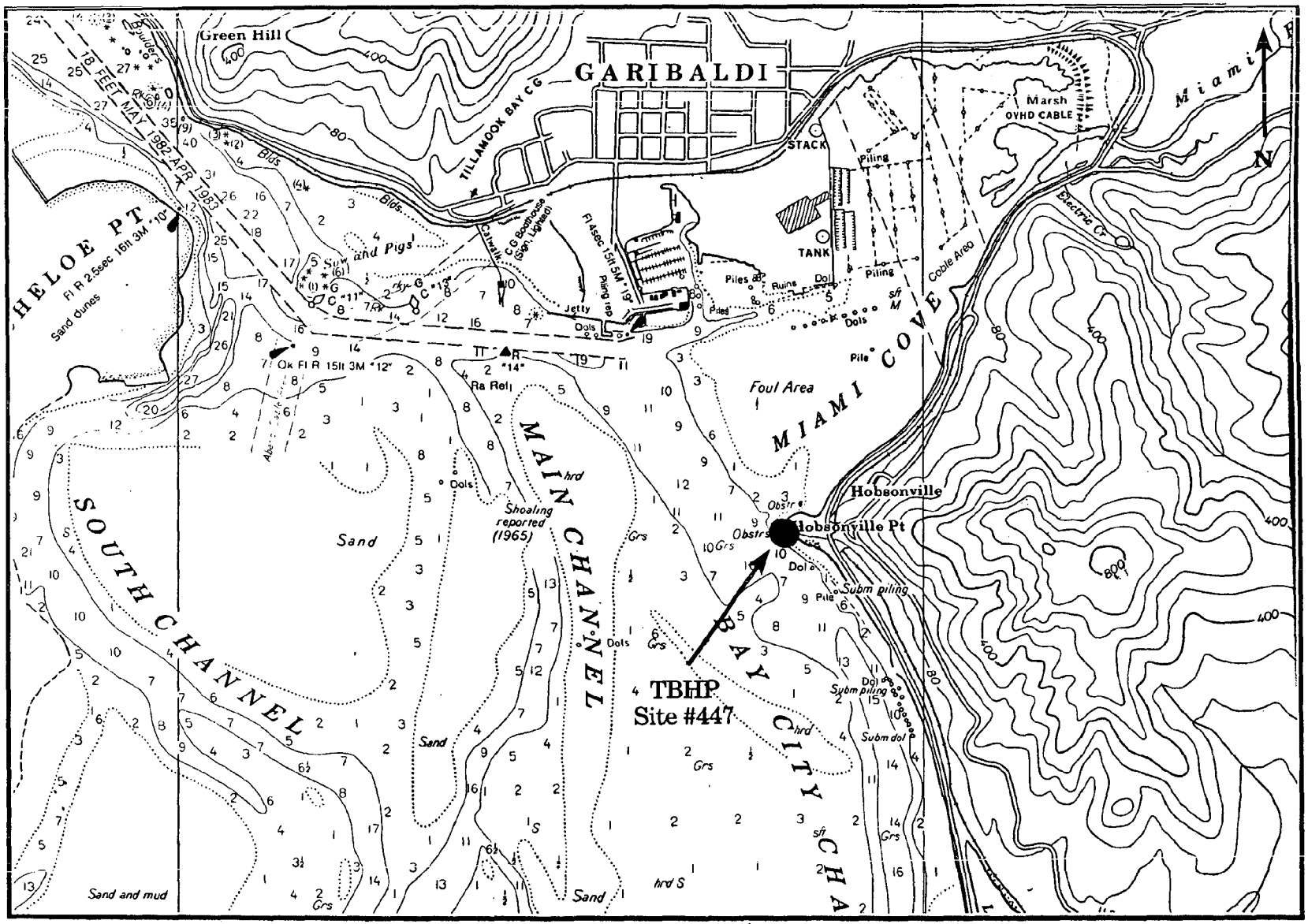
POSSIBLE CONTAMINANTS - Possible sources of contaminants include the fishing industry in Garibaldi.

ENVIRONMENTAL DATA

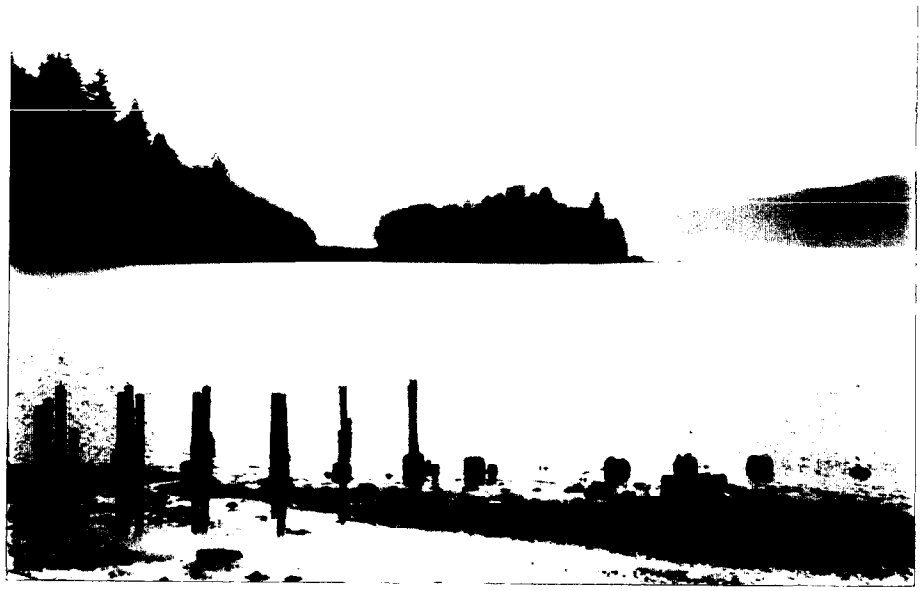
Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	8.0	8.2	14 December 1994



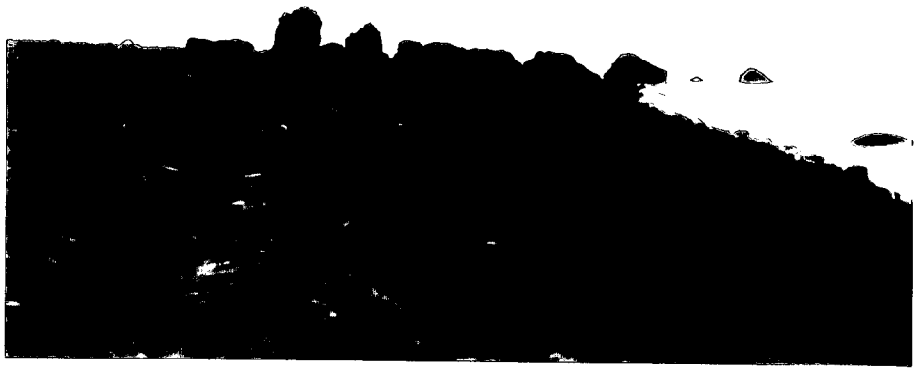
Site #447 (TBHP), Tillamook Bay Hobsonville Point.



Site #447 (TBHP), Tillamook Bay Hobsonville Point (from chart 18558).



Site #447 (TBHP), Tillamook Bay Hobsonville Point.



GERG SITE NUMBER - 449 **DESIGNATOR** - CRSJ

SITE - SOUTH JETTY, COLUMBIA RIVER MOUTH, OR

NOMINAL SITE CENTER - 46°13.72'N 124°01.39'W

LOCATED ON NOS CHART # - 18521

SITE ACCESS - This site is located on the south jetty at the mouth of the Columbia River. From Astoria, drive south on Highway 101 across Youngs Bay. Near the south side of Youngs Bay, take the Warrenton-Astoria Highway west. From the Warrenton-Astoria Highway, take the Fort Stevens Highway north to Fort Stevens State Park and follow the signs to parking lot C. Park the car and find the trail to the jetty. At the jetty, turn right and walk approximately 1/2 mile along the base of the jetty until reaching the mussel bearing rocks.

SITE DESCRIPTION - The site center is approximately 50 meters beyond the first of the mussel-bearing rocks on the river side of the base of the jetty, and is not designated by a specific feature. The discrete collection stations included the site center and two other discrete stations approximately 10 meters on either side of the site center. No photos were obtained from this site due to darkness. Extreme caution should be used in sampling this site as large waves frequently crash over the jetty and onto the river side. Care also should be taken when approaching the site because there are areas of very soft sand which are exposed at low tide.

BIVALVE COLLECTIONS

1995 *Mytilus edulis* occurred in extensive mats covering large surfaces of the jetty's base rocks, although they were small. Collected organisms ranged from approximately 10-20 millimeters in shell length.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

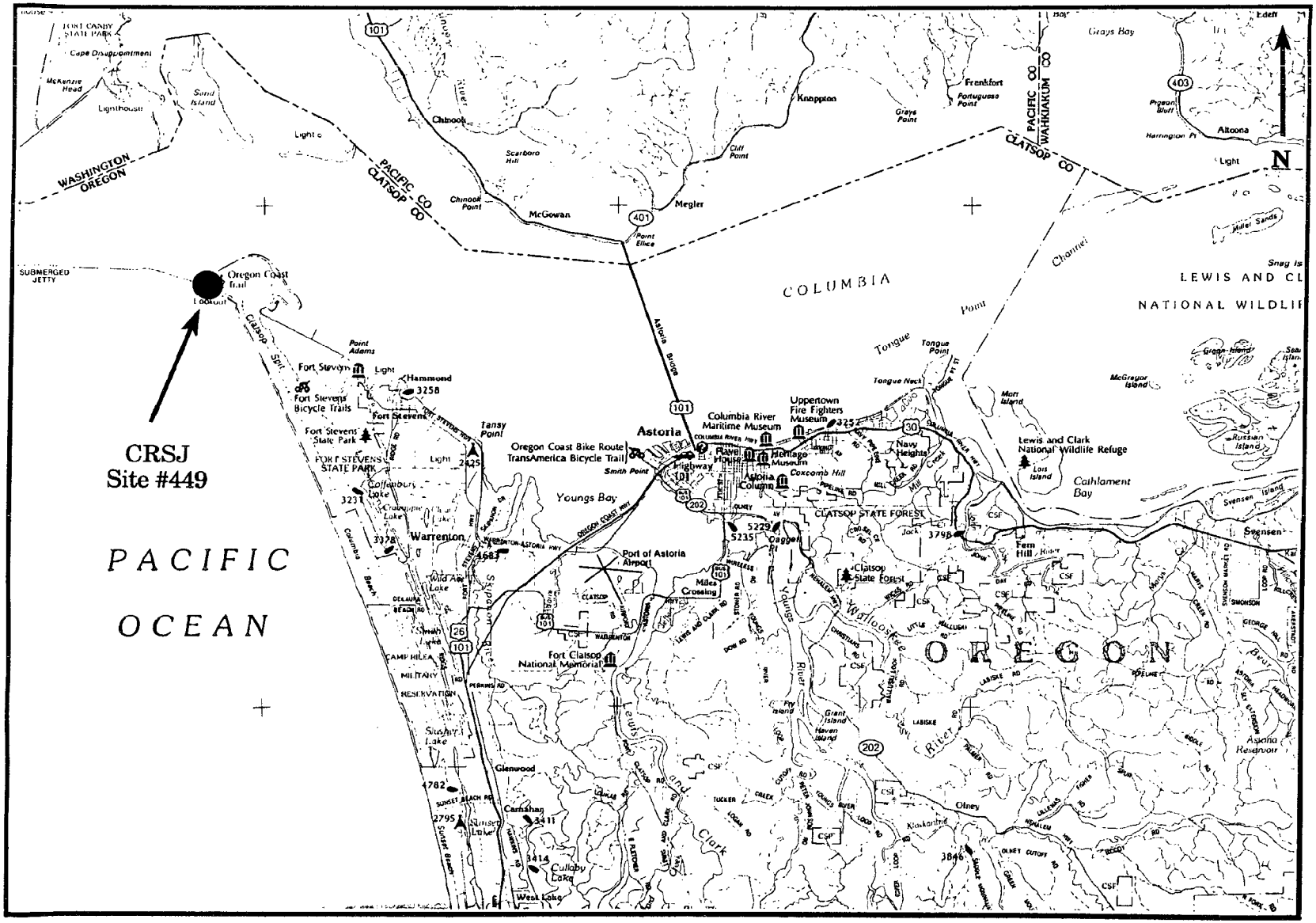
Bivalves - hand
Sediments - NA

WATER DEPTH - 0.0 MLLW

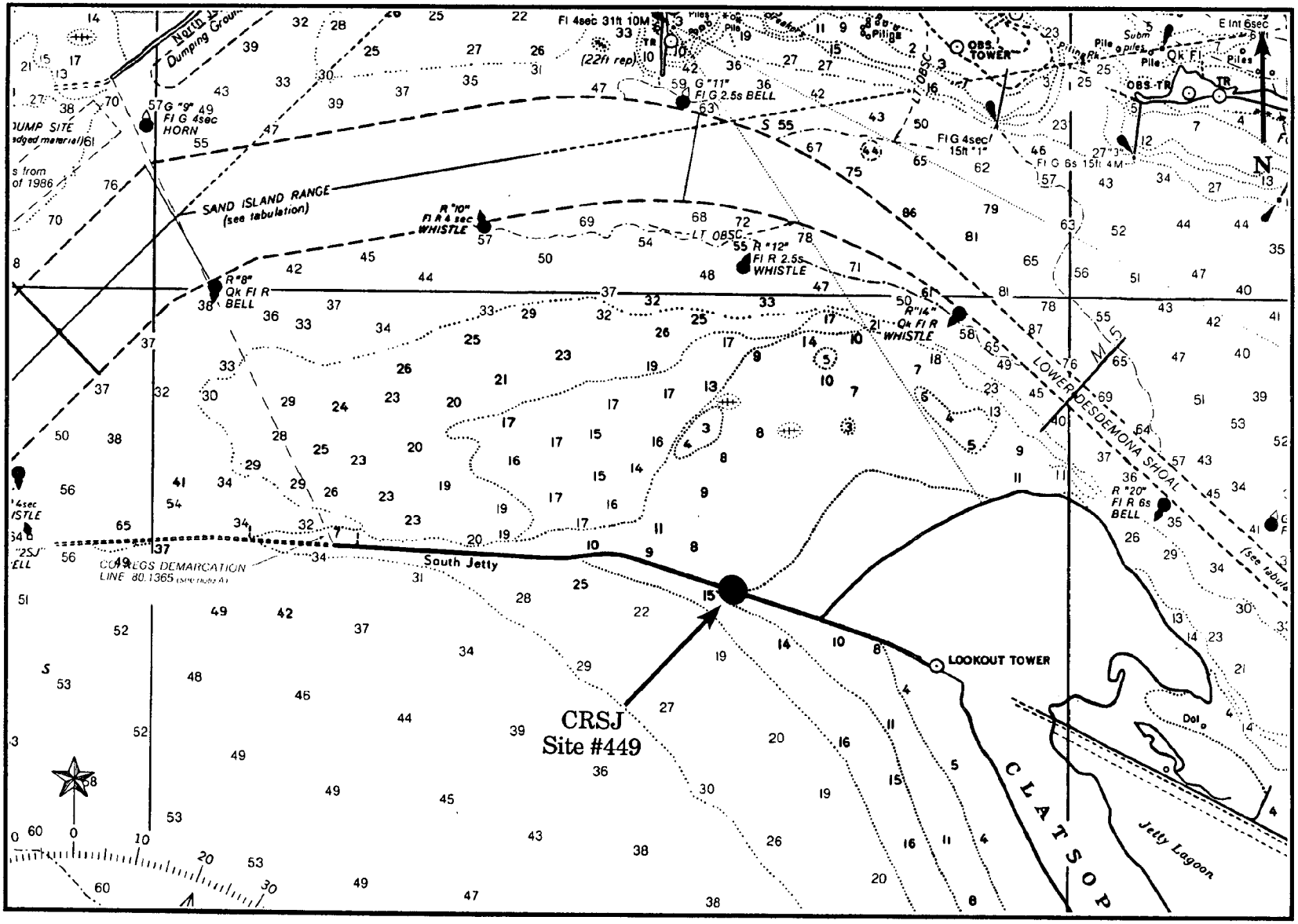
POSSIBLE CONTAMINANTS - The Columbia River has an extensive drainage that includes both urban/industrial and rural/agricultural areas.

ENVIRONMENTAL DATA

Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	17.7	6.9	30 January 1995



Site #449 (CRSJ), Columbia River Mouth South Jetty.



Site #449 (CRSJ), Columbia River Mouth South Jetty (from chart 18521).

WASHINGTON SITES

GERG SITE NUMBER - 452 **DESIGNATOR** - GHWJ

SITE - WESTPORT JETTY, GRAY'S HARBOR, WA

NOMINAL SITE CENTER - 46°54.70'N 124°07.03'W

LOCATED ON NOS CHART # - 18502

SITE ACCESS - This site is located on the seawall at the base of the jetty in Westport, on Gray's Harbor. Take Highway 105 to Westport. In Westport, drive toward the harbor. Locate the blue and white observation tower, and park nearby. The collection site is on the seawall near the observation tower.

SITE DESCRIPTION - The site center is on the bayward side of the seawall closest to the observation tower. Mussels were collected from the site center, and two other discrete stations separated by 10 meters on either side of the site center. Photos were inadvertently not taken at this site.

BIVALVE COLLECTIONS

1995 *Mytilus californianus* was abundant at this site. Collected organisms ranged from approximately 40-80 millimeters in shell length.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

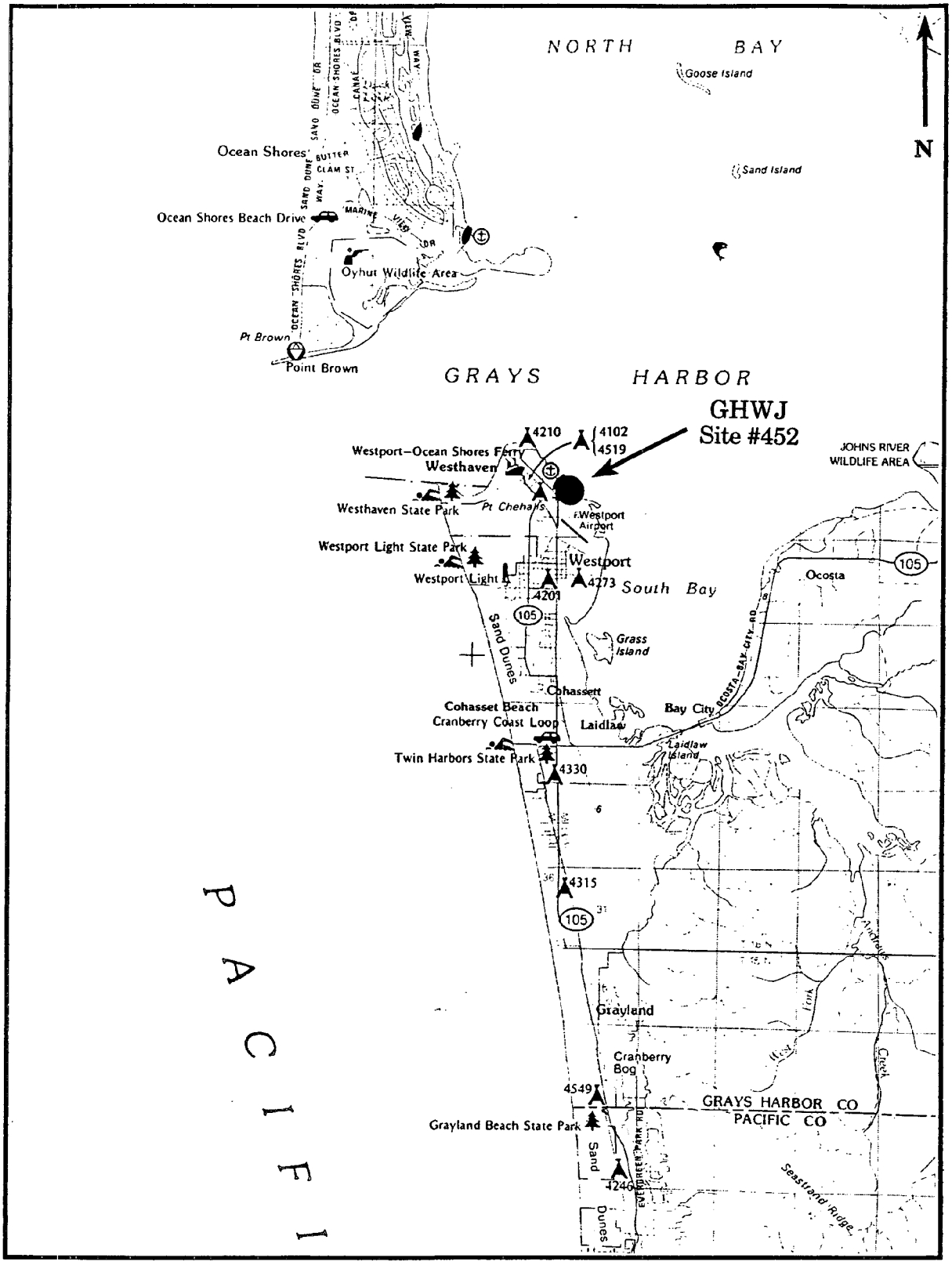
Bivalves - hand
Sediments - NA

WATER DEPTH - +1.0 m MLLW

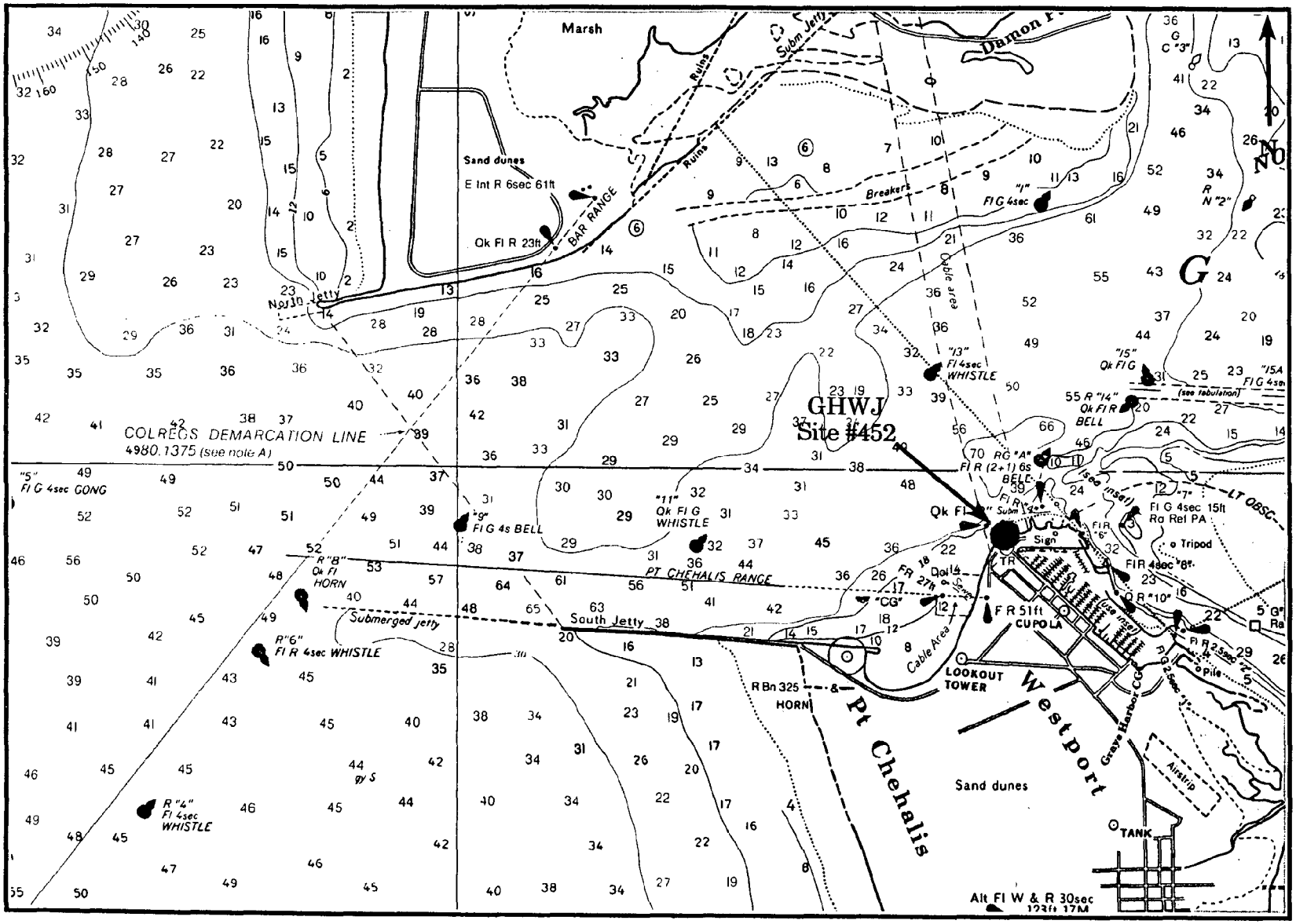
POSSIBLE CONTAMINANTS - Nearby fishing, timber, and shipping industries may provide possible sources of contaminants at this site.

ENVIRONMENTAL DATA

Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	24.3	6.6	30 January 1995



Site #452 (GHWJ), Gray's Harbor Westport Jetty.



Site #452 (GHWJ), Gray's Harbor Westport Jetty (from chart 18502).

GERG SITE NUMBER - 457 **DESIGNATOR** - PSHC

SITE - HOOD CANAL, PUGET SOUND, WA

NOMINAL SITE CENTER - 47°49.91'N 122°41.31'W

LOCATED ON NOS CHART # - 18441

SITE ACCESS - The bivalve site is located at the abandoned Southpoint Ferry Terminal just south of the Hood Canal Floating Bridge. From Highway 104 several miles west of the Hood Canal Floating Bridge, turn onto Southpoint Road, which runs between Highway 104 and the abandoned ferry terminal. Proceed to the end of Southpoint Road. Park near the pilings of the abandoned ferry terminal.

SITE DESCRIPTION - The site center is the northeast corner of the parking lot at the abandoned ferry terminal. The only observed mussel habitat was the pilings of the abandoned ferry terminal, approximately 25 meters north of the site center. This is a rather small site, so discrete collection stations were not designated.

BIVALVE COLLECTIONS

1995 *Mytilus edulis* was rare at this site. In fact, the majority of the collected mussels were growing on a rope hanging down amongst the pilings. Collected organisms ranged in size from approximately 20-50 millimeters in shell length. There were many sea stars (*Pycnopodia* spp.) present during the collection, indicating that predation may account for the rarity of mussels at this site.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

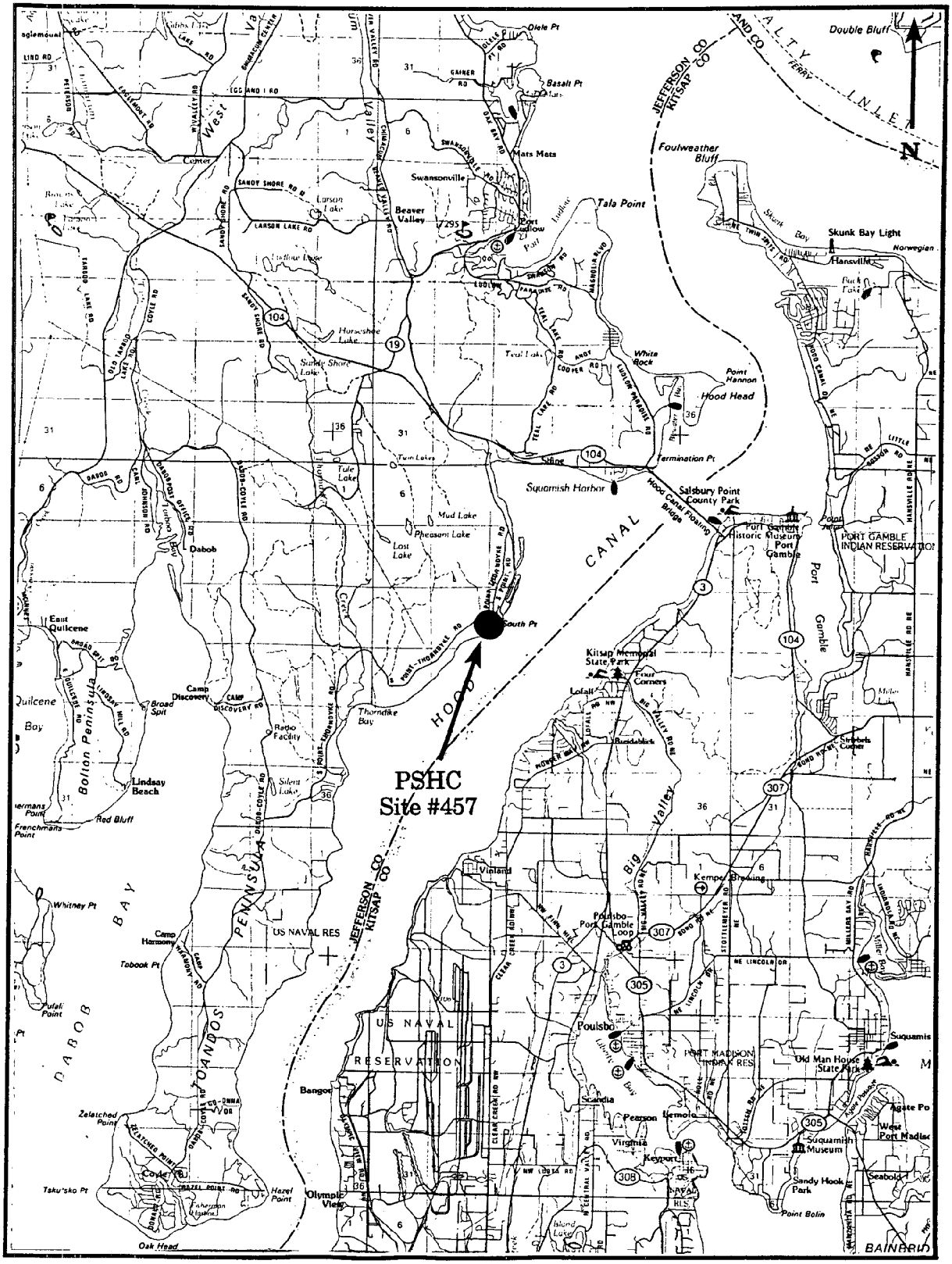
Bivalves - hand
Sediments - NA

WATER DEPTH - +2.0 m MLLW

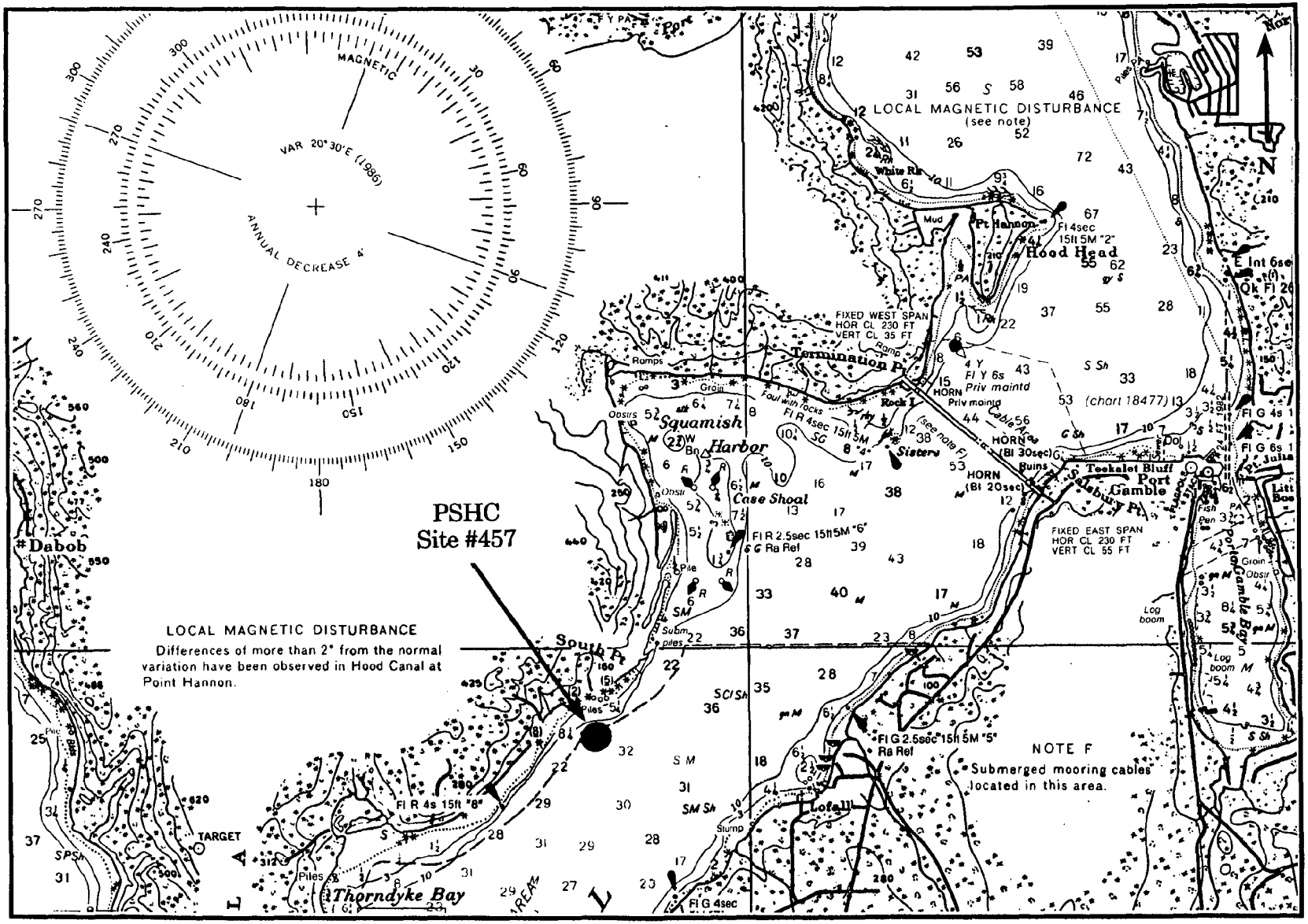
POSSIBLE CONTAMINANTS - The pilings of the ferry terminal are heavily coated with creosote, providing a possible source of contaminants at this site.

ENVIRONMENTAL DATA

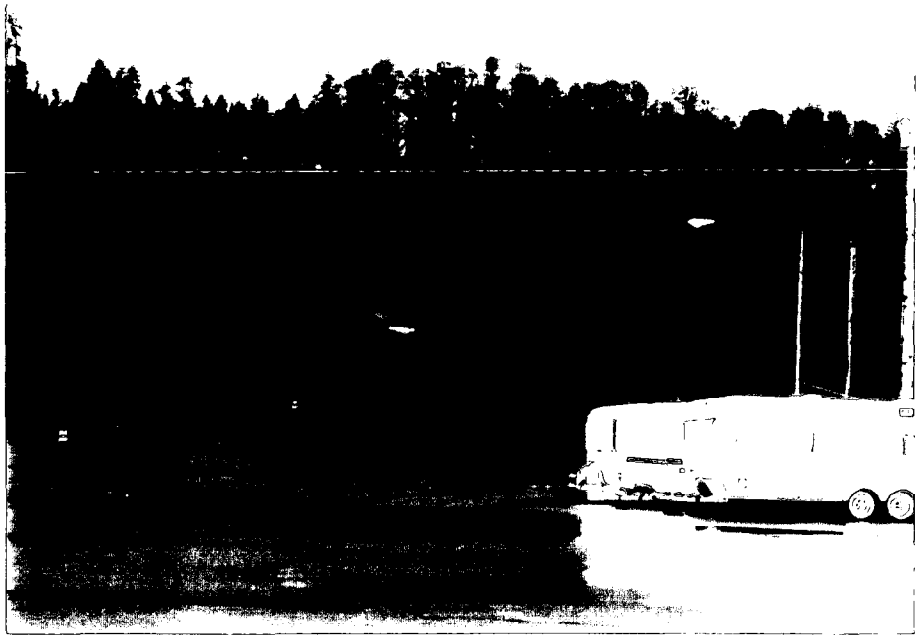
Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	23.7	7.2	29 January 1995



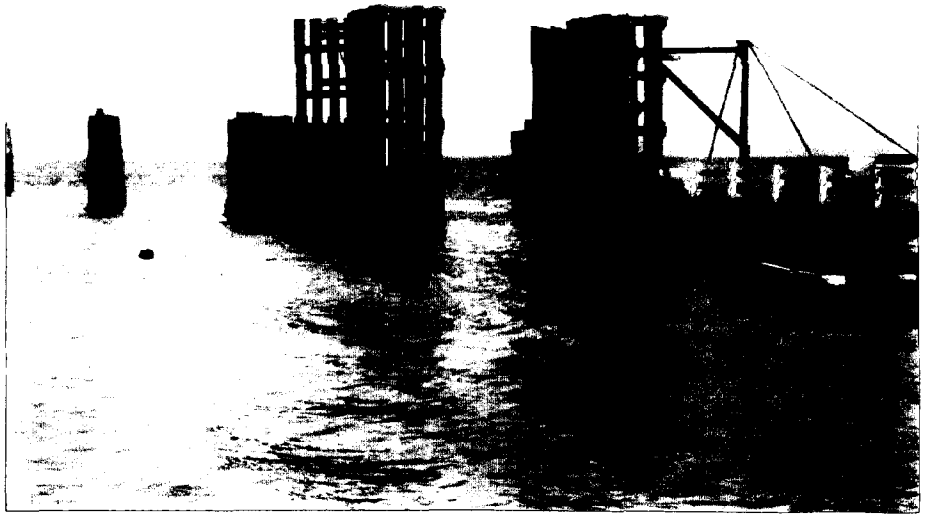
Site #457 (PSHC), Puget Sound Hood Canal.



Site #457 (PSHC), Puget Sound Hood Canal (from chart 18441).



Site #457 (PSHC), Puget Sound Hood Canal.



GERG SITE NUMBER - 458 **DESIGNATOR** - SSBI

SITE - BUDD INLET, SOUTH PUGET SOUND, WA

NOMINAL SITE CENTER - 47°05.96'N 122°53.65'W

LOCATED ON NOS CHART # - 18456

SITE ACCESS - This site is located adjacent to the abandoned Washington State Department of Natural Resources Marine Research and Development Center Laboratory near Olympia. From downtown Olympia, drive north on East Bay Drive, which turns into Boston Harbor Road. From Boston Harbor Road, turn left onto 47th Avenue SW and proceed down 47th Avenue SW to the Washington State Department of Natural Resources Marine Research and Development Center Laboratory (WSDNR). This facility has been abandoned because of leaking fuel storage tanks, so permission is required to access this site across State property. Call the facilities manager, Kirstan Arestad [(360) 902-1208] at least two weeks in advance of the intended collection date. Alternatively, the site can be accessed through a trailer park just north of the laboratory property. The trailer park information is as follows: Sea Shore Villa Trailer Park, 4805 Cushman Road, Olympia, WA [(206) 357-5846]. From 47th Avenue SW turn right on Cushman Road and proceed to the trailer park. Obtain permission from the manager. Find the road to the beach on the left (south) side of the trailer park, and drive down to the beach.

SITE DESCRIPTION - The site center is the landward end of the marine laboratory pier. The three discrete collection stations were as follows: 1) the rip-rap at the base of the pier, 2) the first pair of pilings from shore, and 3) a set of unattached pilings 10 meters north of the pier.

BIVALVE COLLECTIONS

1995 *Mytilus edulis* was abundant at this site. Collected organisms ranged from approximately 35-65 millimeters in shell length. Oysters (*Crassostrea gigas*), and clams (*Tapes, Saxidomus,* etc.) were also abundant at this site.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

Bivalves - hand
Sediments - NA

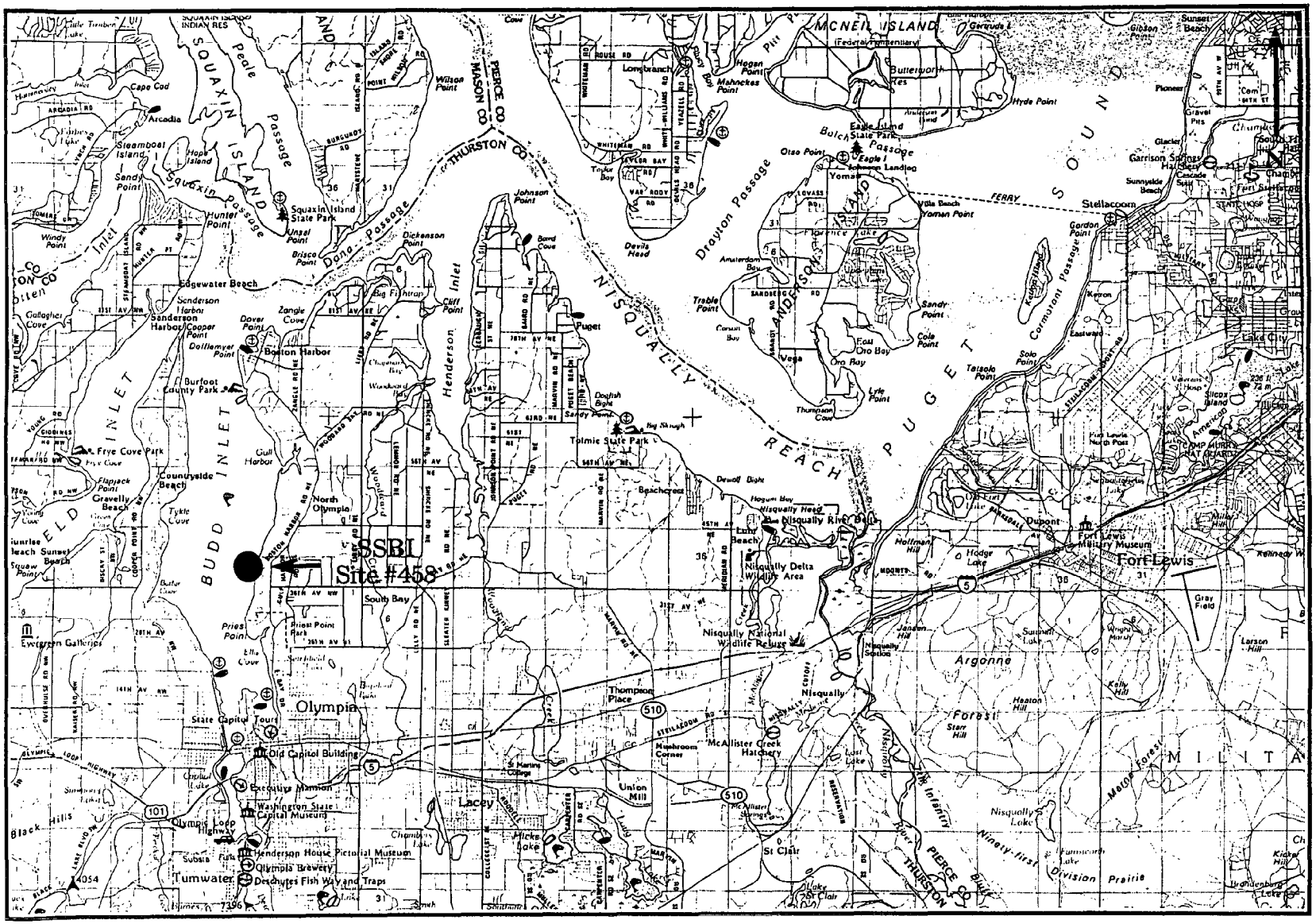
WATER DEPTH - +0.1 m MLLW

POSSIBLE CONTAMINANTS - This site is only a few miles from Olympia so potential contaminants may include urban runoff, as well as those present from the timber and fishing industries. The U.S. Navy also apparently utilized several

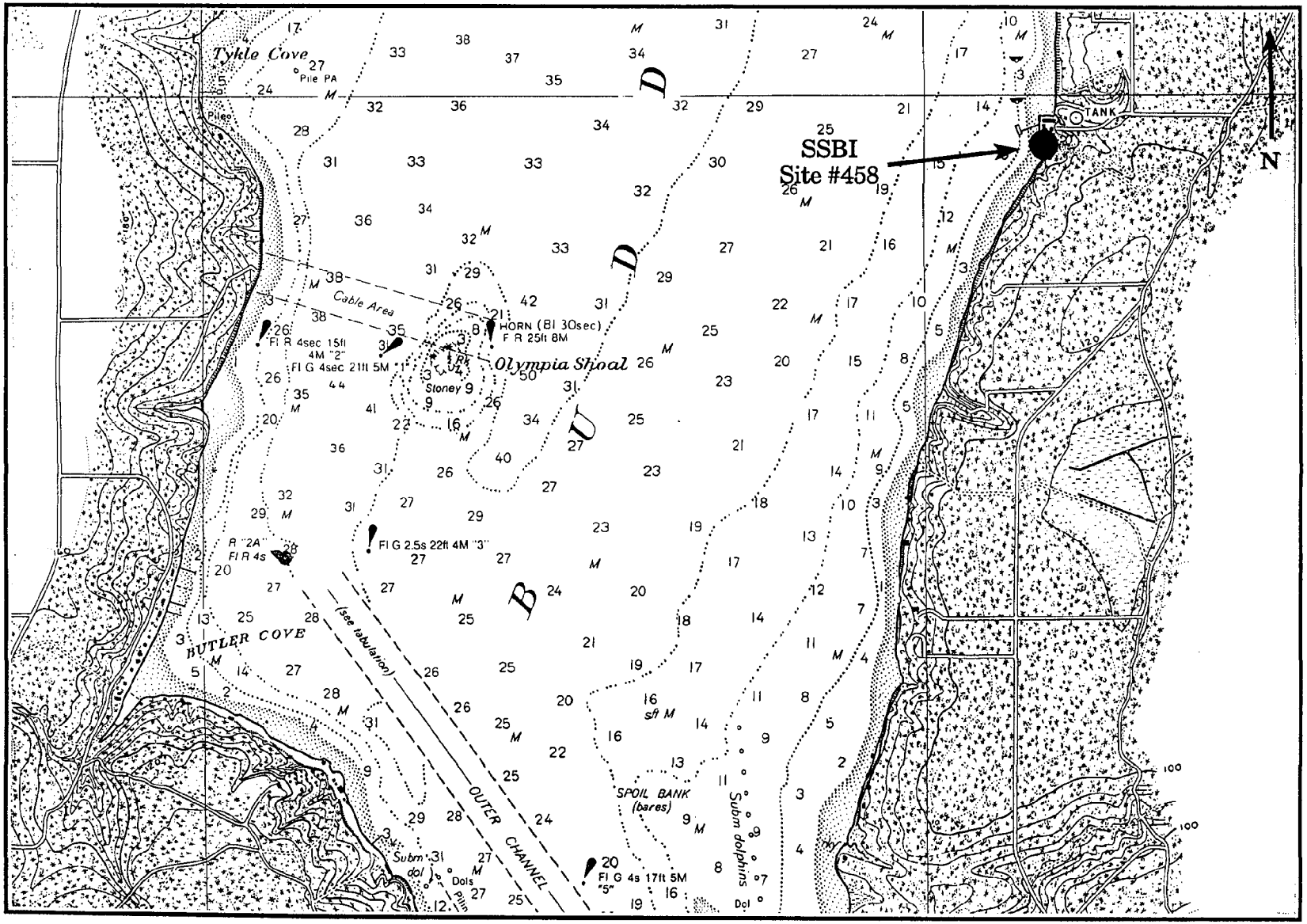
underwater dump sites nearby. Moreover, this site was abandoned by the WSDNR due to leaking fuel tanks on the property.

ENVIRONMENTAL DATA

Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	23.3	7.5	15 December 1994



Site #458 (SSBI), South Puget Sound Budd Inlet.



Site #458 (PSBI), South Puget Sound Budd Inlet (from chart 18456).

GERG SITE NUMBER - 465 **DESIGNATOR** - WIPP

SITE - POSSESSION POINT, WHIDBEY ISLAND, WA

NOMINAL SITE CENTER - 47°54.27'N 122°22.59'W

LOCATED ON NOS CHART # - 18473

SITE ACCESS - This site is on the east side of Possession Point, at the south end of Whidbey Island. It is most easily accessed via private property, and prior permission must be obtained for collections. Take the ferry to the town of Clinton. Exit the ferry terminal and turn left at the first intersection onto Humphrey Road. Proceed south to Glendale Road and turn left onto Jewett Road, which turns into Possession Point Road. From Possession Point Road, turn right onto South Franklin Road and proceed to the end of the road. At the end of the road, access is gained to the shore across property owned by Mrs. Elisabeth Albertson, 83355 South Franklin Road [(206) 579-5888]. The site is the cobble beach just southeast of the Albertson's property.

SITE DESCRIPTION - The site center is on the beach approximately 100 meters southeast of the retaining wall between the Albertson's property and top of the beach. Discrete collection stations were not established because mussels were extremely rare and were collected over approximately 300 square meters of beach. This site is a cobble beach with widely scattered boulders. Mussels were found attached to the undersides of a few of the larger boulders that could be turned over.

BIVALVE COLLECTIONS

1995 *Mytilus edulis* was rare at this site and specimens were small. Collected organisms ranged from approximately 12-40 millimeters in shell length. The presence of many sea stars (*Pisaster* spp.) suggested that predation may partially explain the low densities of mussels at this site

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

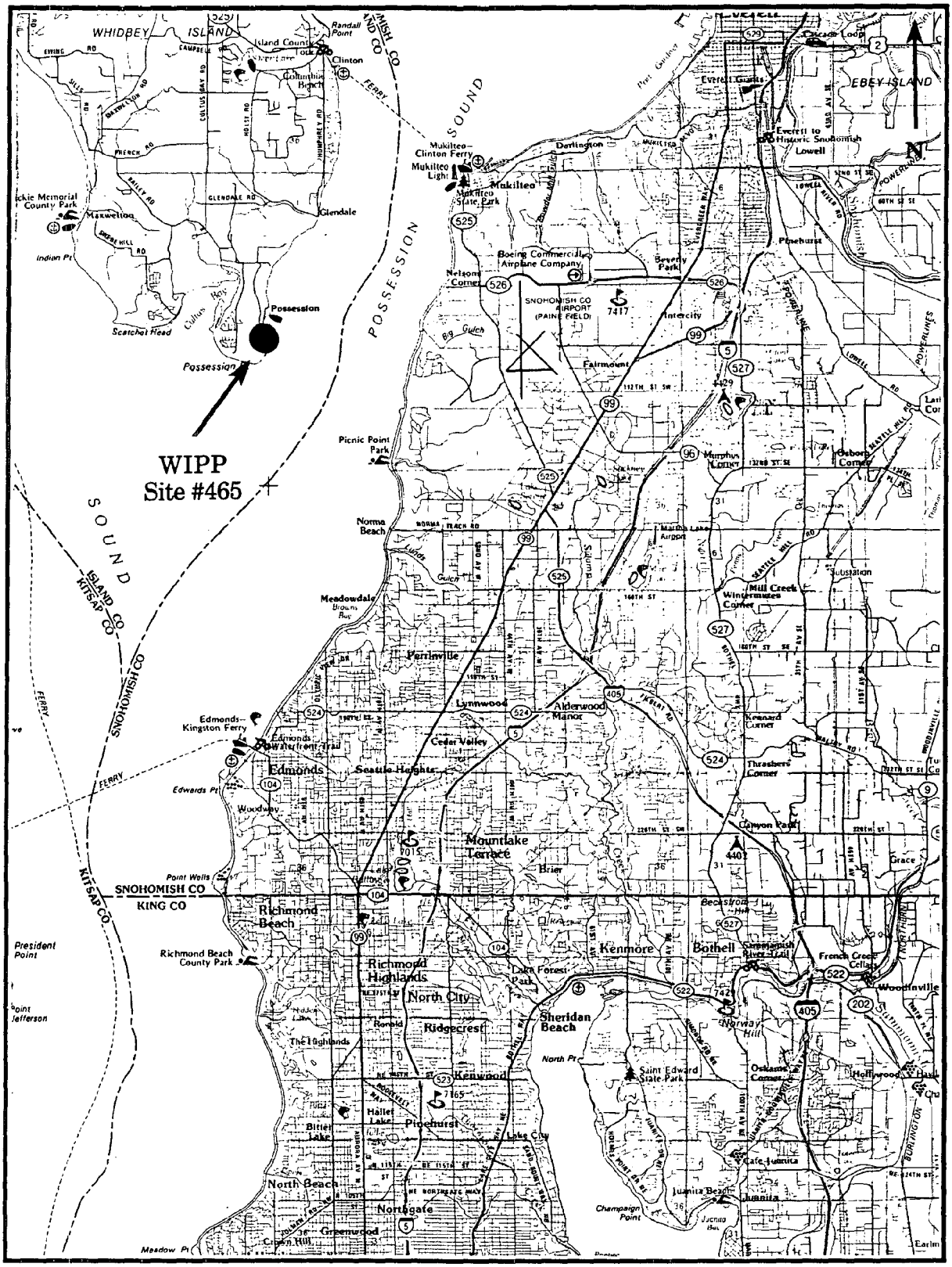
Bivalves - hand
Sediments - N/S

WATER DEPTH -

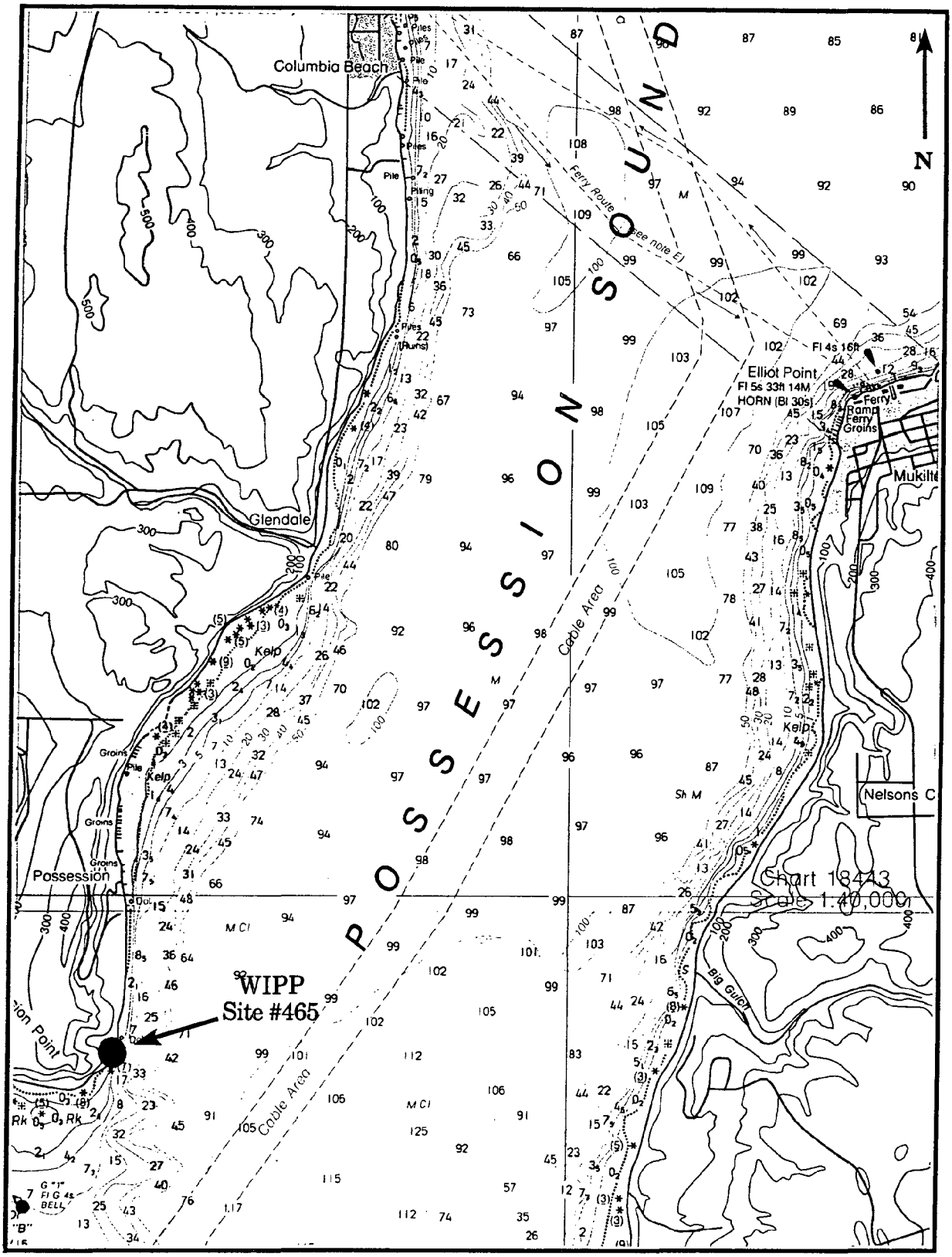
POSSIBLE CONTAMINANTS - No nearby sources of possible contaminants were observed at this site.

ENVIRONMENTAL DATA

Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	29.0	8.1	16 December 1994



Site #465 (WIPP), Whidbey Island Possession Point.



Site #465 (WIPP), Whidbey Island Possession Point (from chart 18473).

Site #465 (WIPP), Whidbey Island Possession Point.

GERG SITE NUMBER - 467 **DESIGNATOR** - BBSM

SITE - SQUALICUM MARINA JETTY, BELLINGHAM BAY, WA

NOMINAL SITE CENTER - 48°45.13'N 122°29.87'W

LOCATED ON NOS CHART # - 18424

SITE ACCESS - This site is located on a jetty adjacent to the Squalicum Marina in Bellingham. From Interstate 5 north in Bellingham, take the Sunset Drive exit west. Proceed through town and turn right onto Marine Drive. From Marine Drive, turn left onto Coho Street. Wind around the marina, bearing left. Park next to the park adjacent to the jetty.

SITE DESCRIPTION - The site center is approximately 2/3 of the way down the jetty from the parking lot, on the bay side of the jetty, and is not designated by a specific topographic or geologic feature. Discrete collection stations included the site center and two other stations approximately 10 meters away, on either side of the site center.

BIVALVE COLLECTIONS

1995 *Mytilus edulis* was moderately abundant on the rocks of the jetty, although the population was comprised of fairly small individuals rather cryptically located on the sides and bottoms of the jetty's rocks. Collected organisms ranged from approximately 25-40 millimeters in shell length. The organisms which were collected at this site shared some external shell characteristics with *Mytilus californianus*, making it difficult to know with certainty that only *M. edulis* was collected, until laboratory examination was possible.

SEDIMENT COLLECTIONS

1995 None

SAMPLING METHODS

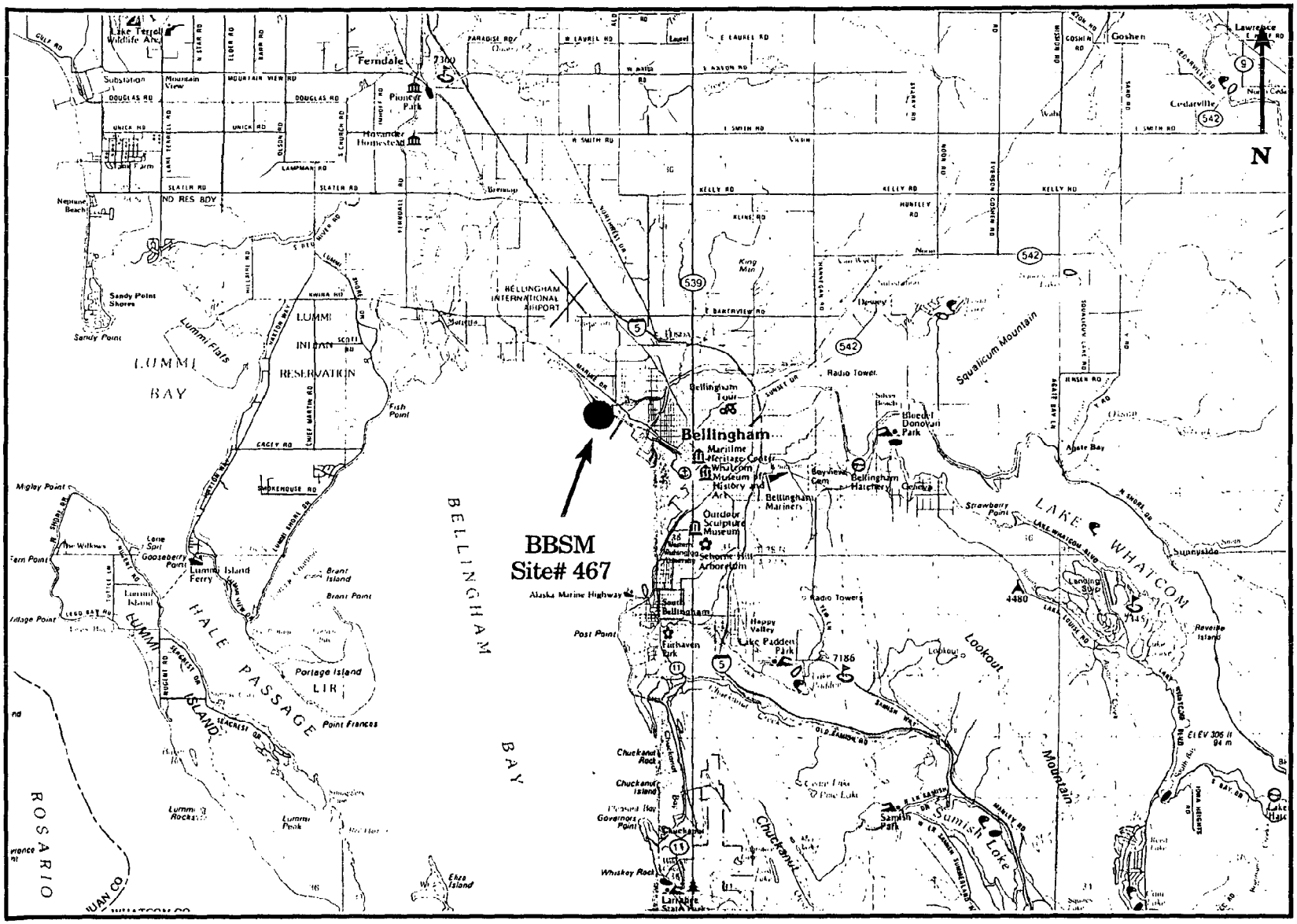
Bivalves - hand
Sediments - NA

WATER DEPTH - +1.5 m MLLW

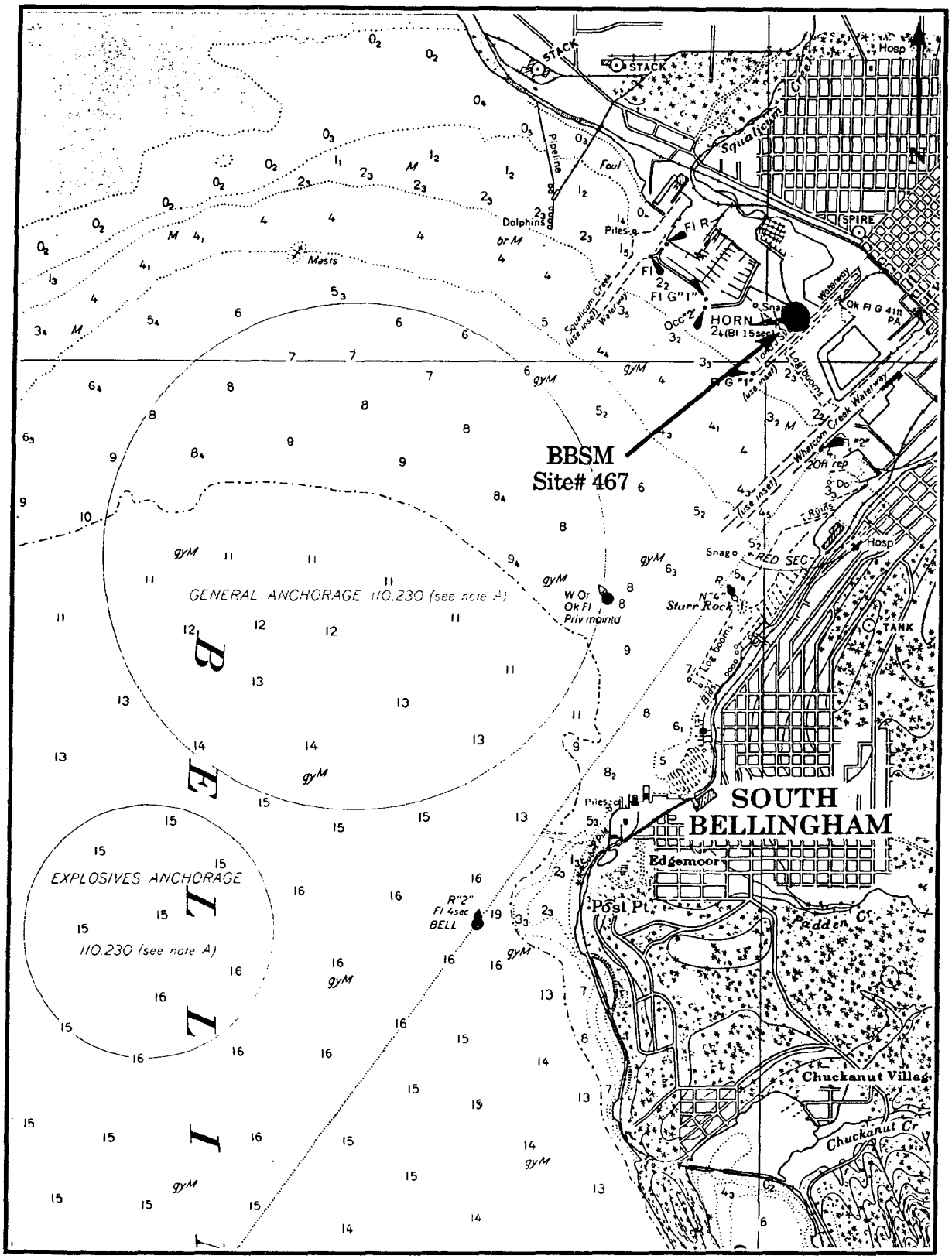
POSSIBLE CONTAMINANTS - The immediate area is heavily industrialized, including a large fishing, pulp and timber industry.

ENVIRONMENTAL DATA

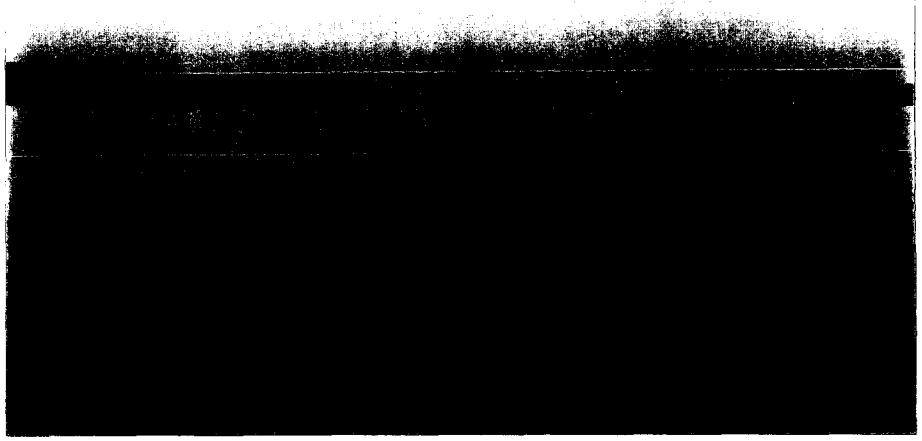
Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	27.0	7.5	28 January 1995



Site #467 (BBSM), Bellingham Bay Squalicum Marina Jetty.



Site #467 (BBSM), Bellingham Bay Squalicum Marina Jetty (from chart 18424).



Site #467 (BBSM), Bellingham Bay Squalicum Marina Jetty.

ALASKAN SITES

GERG SITE NUMBER - 469 **DESIGNATOR** -KTMP

SITE - MOUNTAIN POINT, KETCHIKAN, AK

NOMINAL SITE CENTER - 55°17.63'N 131°32.88'W

LOCATED ON NOS CHART # - 17428

SITE ACCESS - The site is easily accessed from Ketchikan, by driving southeast down the highway towards Mountain Point. The site is located just below the parking area at mile marker 5.8, on the South Tongass Highway, at the navigational marker tower on the shoreline. This bivalve site is a relatively easy walk-up site. There is a small boatramp and breakwater about 0.25 miles to the east of the site, where a boat can be launched for sediment sampling.

SITE DESCRIPTION - The nominal site center is at the navigational marker, at Mountain Point. Station 1 bivalves (Blue Mussels - *Mytilus edulis*) were collected some 3 meters below the base of the marker, on a large seaward facing vertical rock. Station 2 mussels were collected from under a large rock overhang, facing the water, some 25 meters northeast of Station 1. Station 3 was located a further 25 meters northeast of Station 2, on the landward facing side of a 2.5 meter high rock form.

OYSTER COLLECTIONS

1995 *Mytilus edulis* - blue mussels, were abundant throughout the entire area. The mussels were all on the small side, occuring in dense patches and clusters on the rocks and boulders.

SEDIMENT COLLECTIONS

1995 None.

SAMPLING METHODS

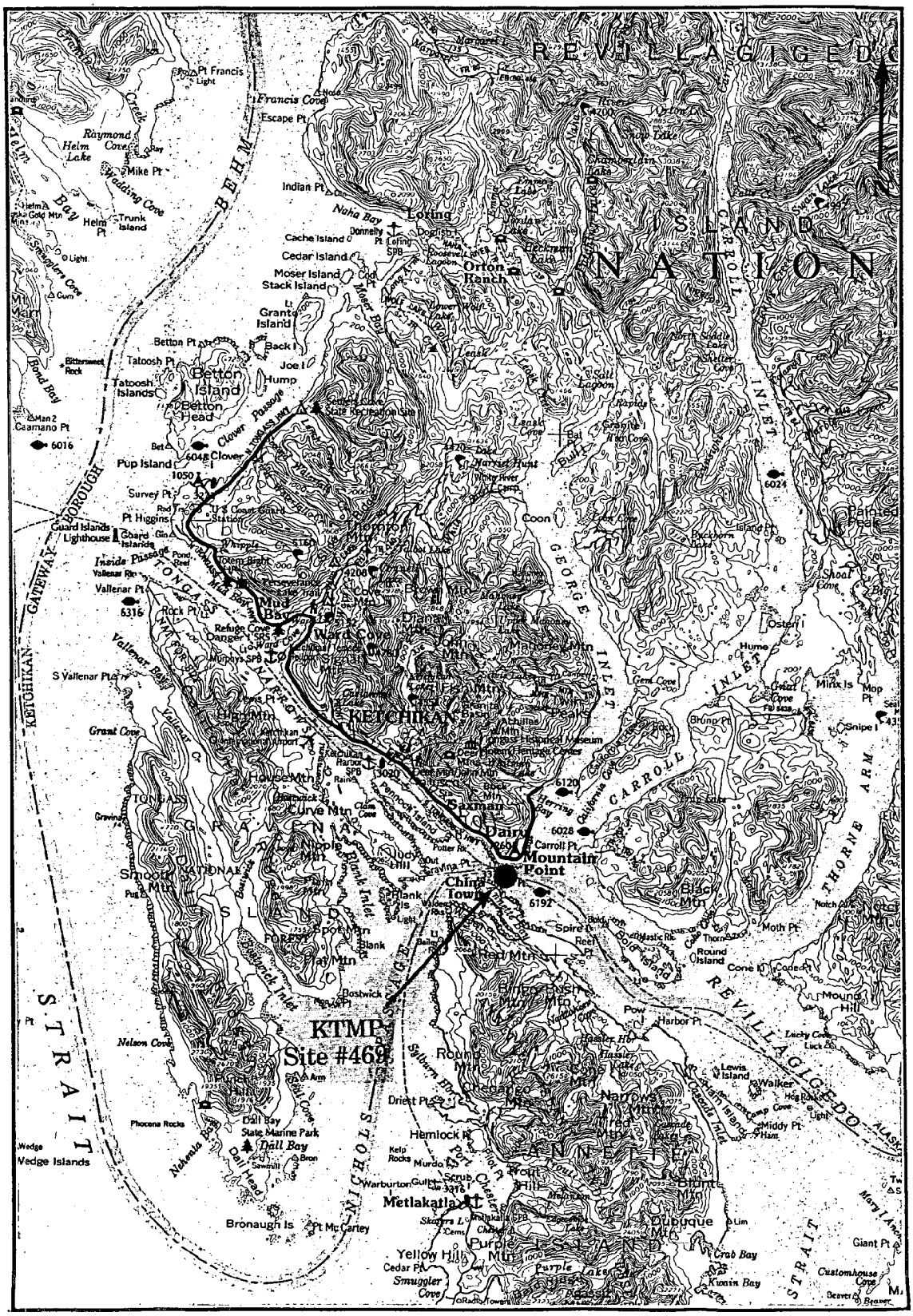
Bivalves - hand
Sediments - NA

WATER DEPTH - + 0.75 m MLLW

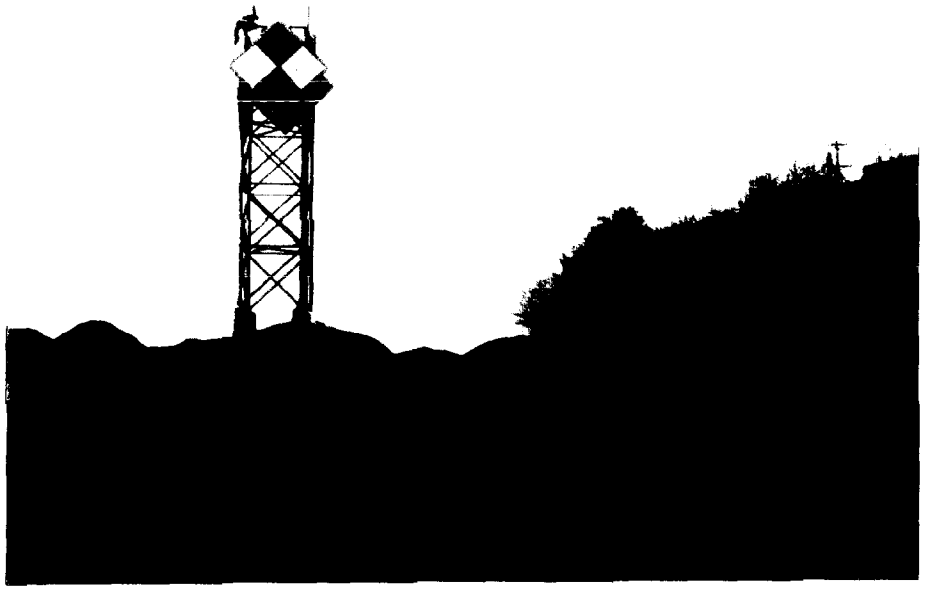
POSSIBLE CONTAMINANTS - There were no obvious point sources of contamination in the immediate vicinity. However, there are a few potential sources of contamination including a small boat ramp and breakwater about 0.25 miles to the east which is regularly used by local boaters and fishermen, and the channel between Mountain Point and Annette Island to the south, is a major waterway regularly used by all the cruise liners, ferries and commercial fishermen.

ENVIRONMENTAL DATA

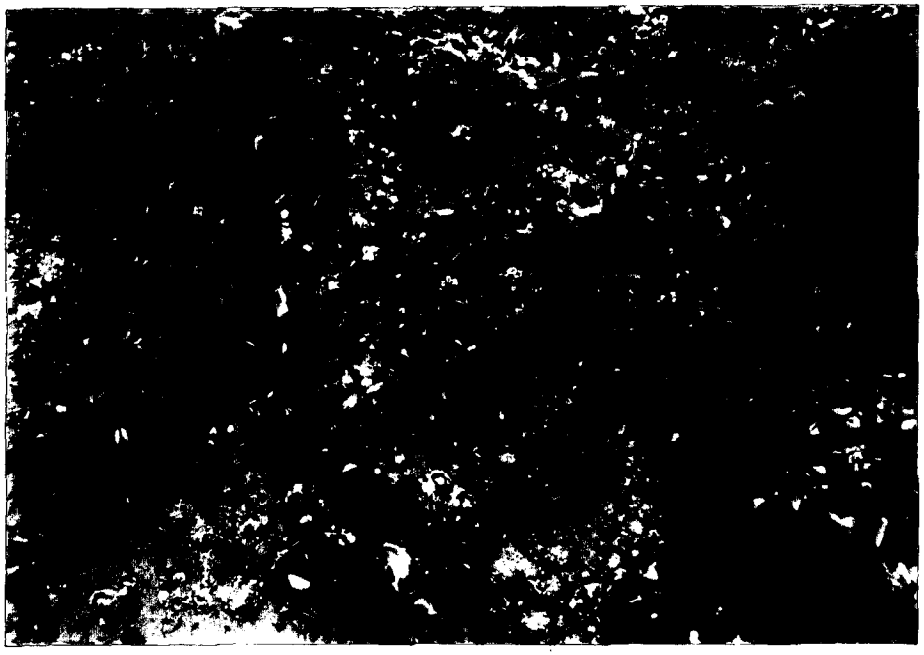
Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	30.0	8.0	16 April 1995



Site #469 (KTMP), Mountain Point, Ketchikan



Site #469 (KTMP), Ketchikan Mountain Point.



GERG SITE NUMBER - 470 **DESIGNATOR** -NBES

SITE - EAST SIDE, NAHKU BAY, AK

NOMINAL SITE CENTER - 59°27.20'N 135°20.19'W

LOCATED ON NOS CHART # - 17317

SITE ACCESS - The site is easily accessed from Skagway, by crossing the Skagway River and following the road southwest around to Yakutania Point. Drive 1.5 miles north on the Klondike Highway and turn left (west) onto Dyer Road. Travel 2.5 miles along the road to the end of the pavement, and then follow the dirt road straight ahead to the rifle range ~ 0.5 miles to Smuggler's Cove. It is a short 100 meter walk down to the beach in the cove.

SITE DESCRIPTION - The nominal site center is in Smuggler's Cove, just to the north of Yakutania Point on the eastern side of Nahku Bay. The three Stations were situated along the north/northwestern side of the cove, in the intertidal zone.

OYSTER COLLECTIONS

1995 *Mytilus edulis* mussels were abundant throught the area. More than 80% of the mussel population was less than 2 cm long, and occured in a 1.5 meter band at the low tide mark. The area is ice bound during the winter months, so that the majority of the mussels are all juveniles.

SEDIMENT COLLECTIONS

1995 None.

SAMPLING METHODS

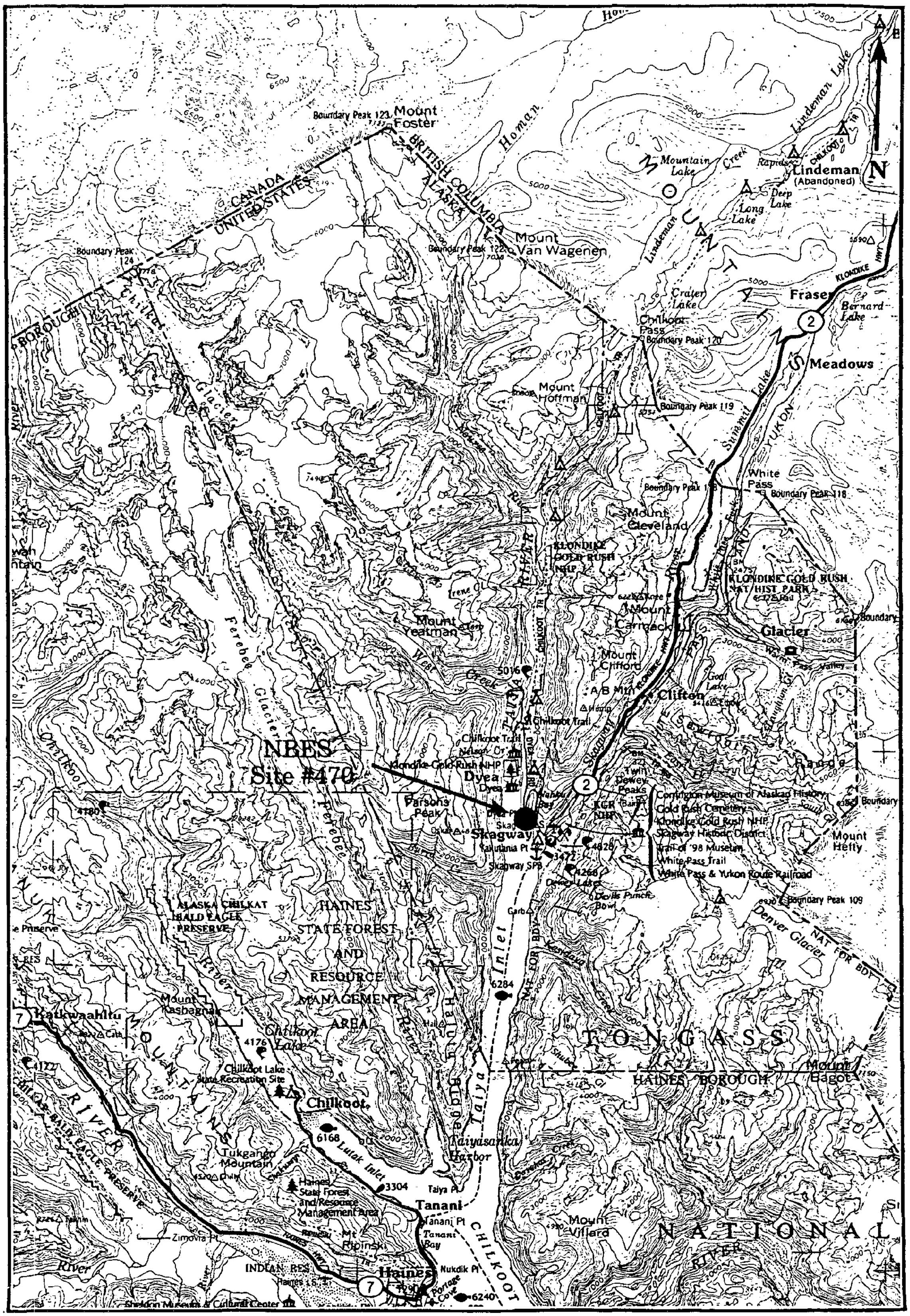
Bivalves - hand
Sediments - NA

WATER DEPTH - + 0.5 m MLLW

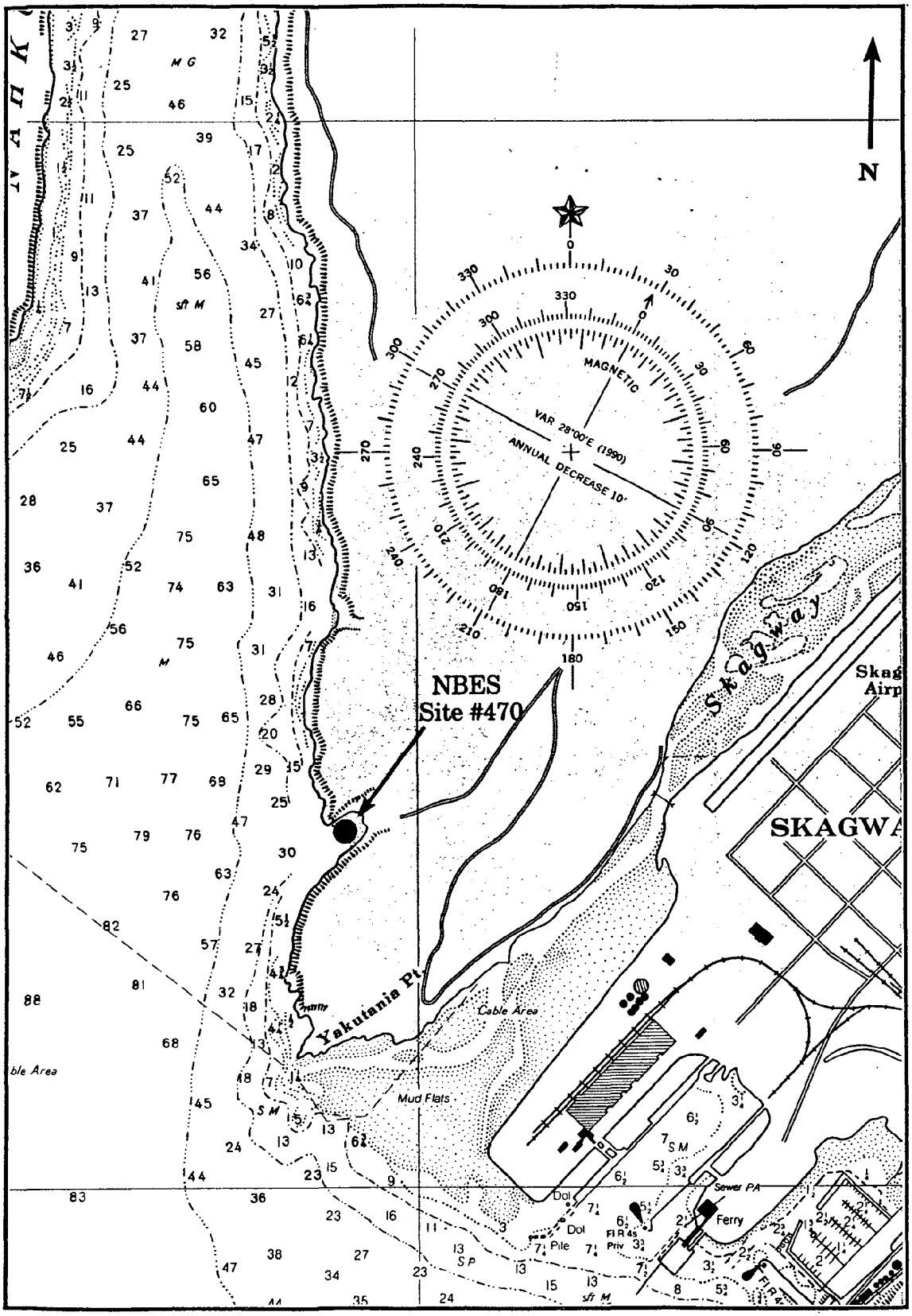
POSSIBLE CONTAMINANTS - There are a number of contaminant sources in the area, that have caused problems for the local population. Lead ore and concentrate was loaded for many years at the nearby Skagway Harbor, and there were numerous spills into the Skagway River from heavy trucks failing to successfully traverse the Klondike Highway. There is an on-going EPA study that is looking at the lead contamination in the local school children. There have also been a number of minor fuel oil, gasoline and diesel spills in the harbor, whilst transferring the fuels from the barges to the dockside storage tanks. During the summer months, Skagway is visited by an average of three cruise ships per week and pollution from these vessels has posed a problem.

ENVIRONMENTAL DATA

Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	12.0	15.5	7 May 1995



Site #470 (NBES), East Side, Nahku Bay



Site #470 (NBES), East Side, Nahku Bay (from chart 17317).

Site #470 (NBES), Nakhu Bay East Side.

GERG SITE NUMBER - 471 **DESIGNATOR** -PWSH

SITE - SHEEP BAY, PRINCE WILLIAM SOUND, AK

NOMINAL SITE CENTER - 60° 38.44'N 145° 59.40'W

LOCATED ON NOS CHART # - 16709

SITE ACCESS - This site is a remote one, and can only be accessed by seaplane or by a long open water boat ride. The site is located in a small cove, just to the north of Sheep Point on the eastern side of Sheep Bay. Sheep Bay is located north-east of Orca Bay, which lies at the eastern end of Prince William Sound. The nearest town of any size is Cordova, which lies some twenty miles to the east-southeast.

SITE DESCRIPTION - The three Stations were collected along a 30 meter transect, in the intertidal zone in the small cove. The transect is marked with steel markers - "SHB".

OYSTER COLLECTIONS

1995 *Mytilus edulis* mussels were abundant throught the area, occurring in a dense band on the rocks and boulders in the intertidal zone. The mussels were all fairly small and decreased in numbers as one progressed up the intertidal area.

SEDIMENT COLLECTIONS

1995 The sediment sample was collected from in and around the rocks near the mussel transect.

SAMPLING METHODS

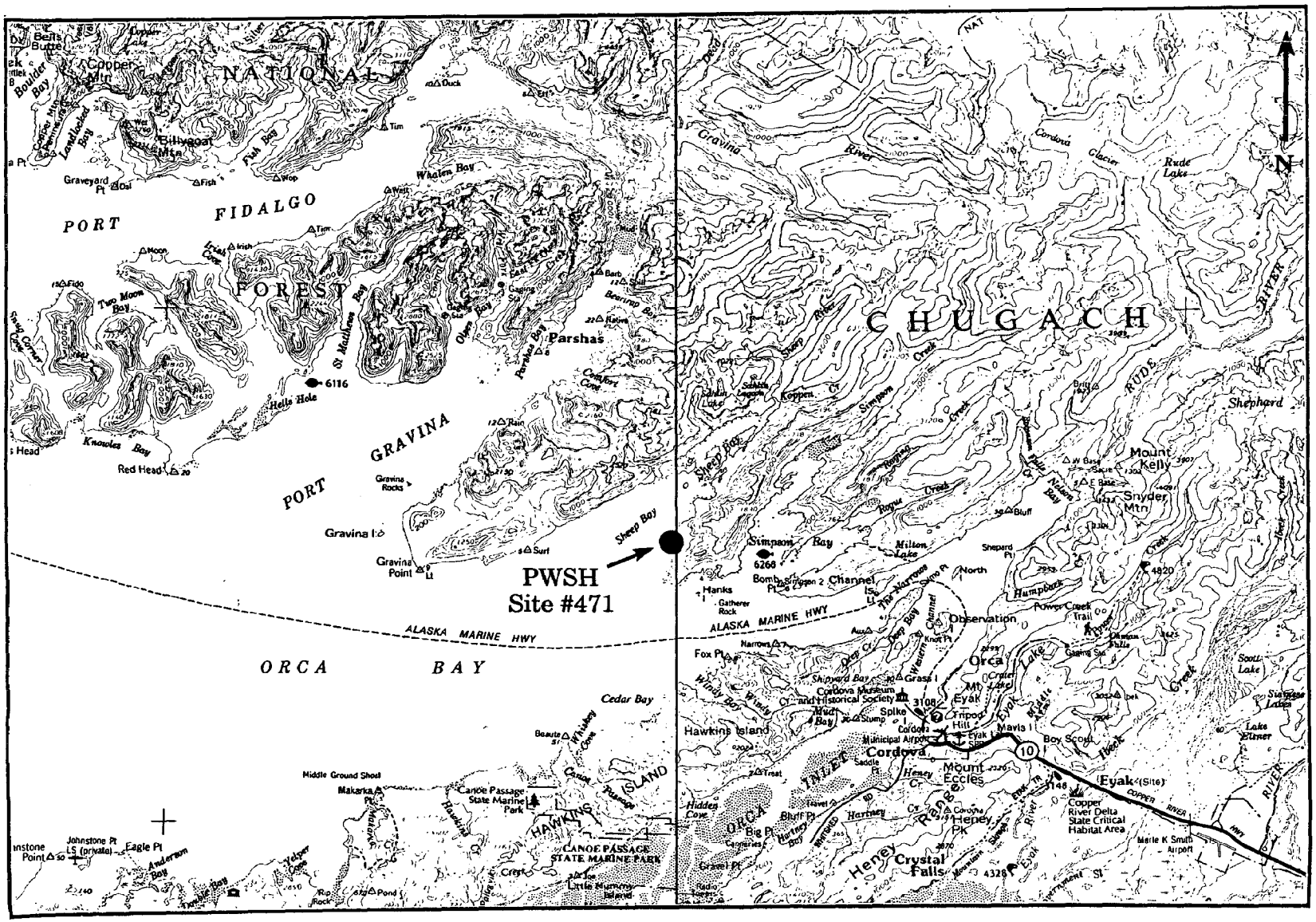
Bivalves - hand
Sediments - hand, Teflon scoop

WATER DEPTH - + 2.1 m MLLW

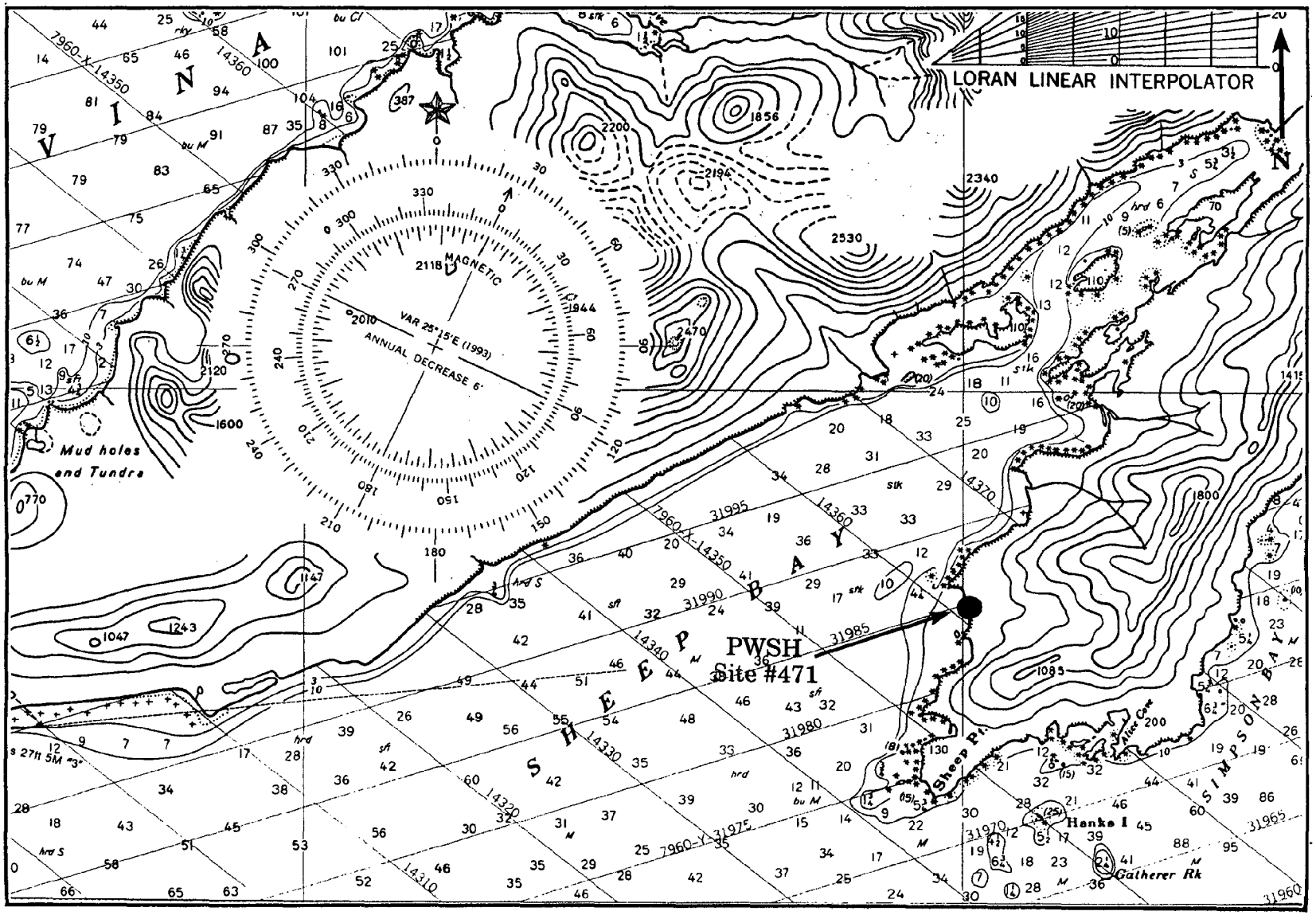
POSSIBLE CONTAMINANTS - There were no obvious nearby visible point sources of contamination in the area.

ENVIRONMENTAL DATA

Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	33.0	4.0	30 March 1995

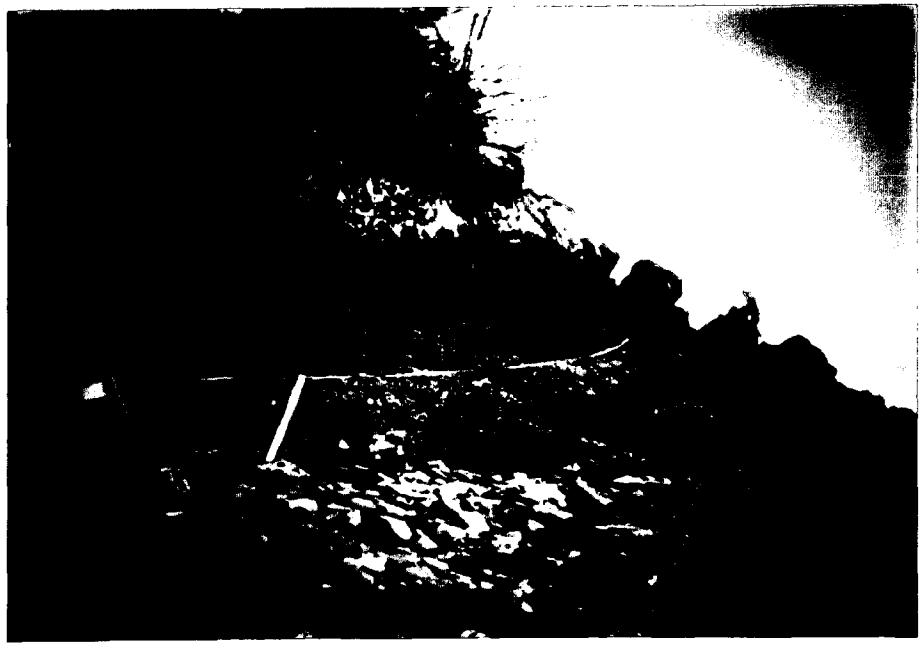


Site #471 (PWSH), Sheep Bay, Prince William Sound



Site #471 (PWSH), Sheep Bay, Prince William Sound (from chart 16709).

Site #471 (PWSH), Sheep Bay, Prince William Sound



GERG SITE NUMBER - 472 **DESIGNATOR** -PWKA

SITE - KNOWLES HEAD, PRINCE WILLIAM SOUND

NOMINAL SITE CENTER - 60°41.28'N 146°35.01'W

LOCATED ON NOS CHART # - 16708

SITE ACCESS - This remote site can only be reached by boat or seaplane. The site is located in a small cove at the western end of Knowles Bay - just to the east of Knowles Head, on the western end of the peninsular between Port Gravina and Port Fidalgo. The site is in the northeastern quadrant of Prince William Sound, and is some 25 miles southeast of Bligh Reef (*Exxon Valdez*).

SITE DESCRIPTION - The nominal site center for the site is in a small cove at the western end of Knowles Bay. The three Stations were collected from the eastern side of the cove, along a 30 meter transect above the low tide level.

OYSTER COLLECTIONS

1995 *Mytilus edulis* mussels were abundant throughtout the area, occuring in a dense band along the intertidal zone.

SEDIMENT COLLECTIONS

1995 The sediment sample was collected from the area adjacent to the transect line, in between the rocks and boulders.

SAMPLING METHODS

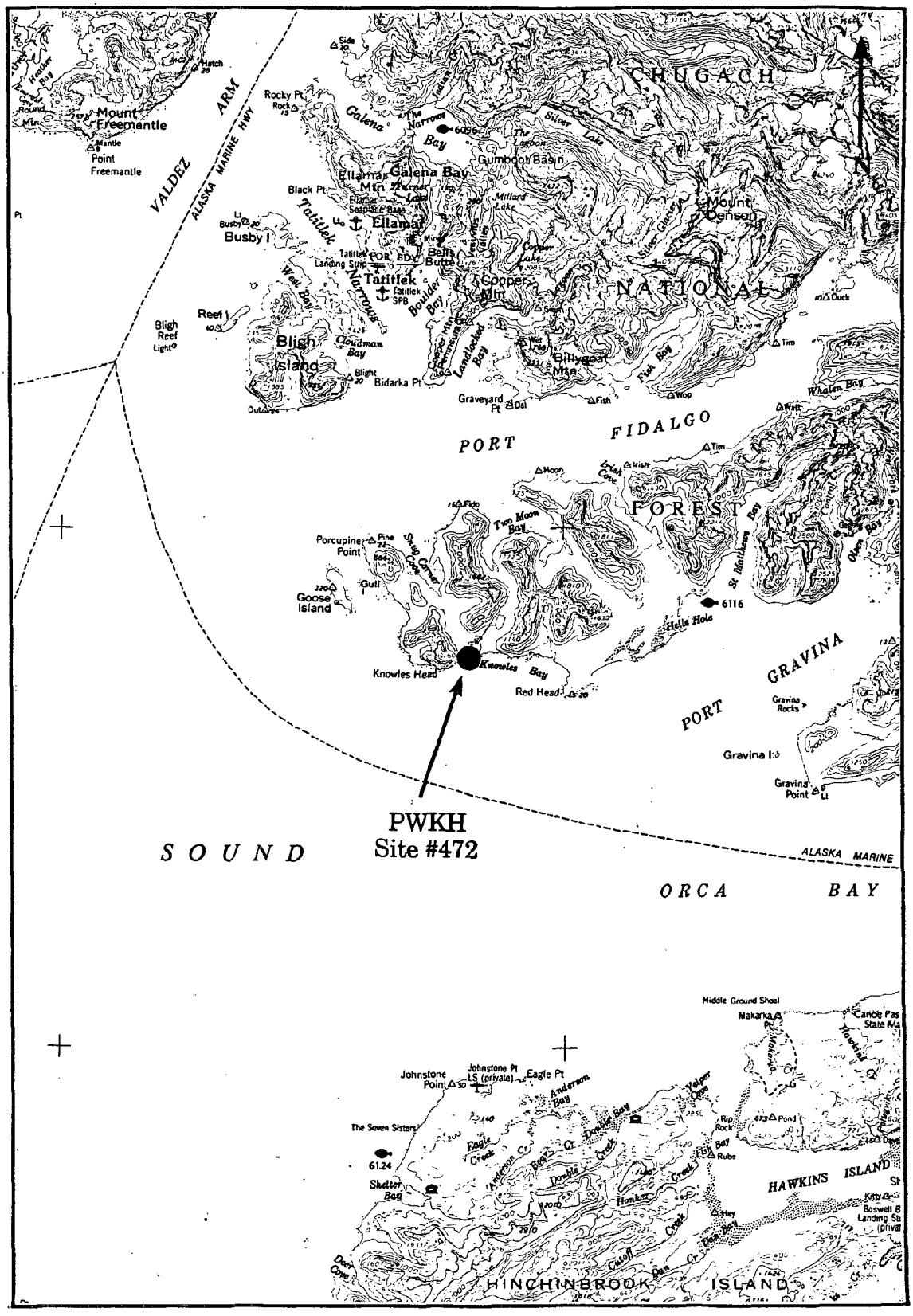
Bivalves - hand
Sediments - hand, Teflon scoop

WATER DEPTH - + 2.4 m MLLW

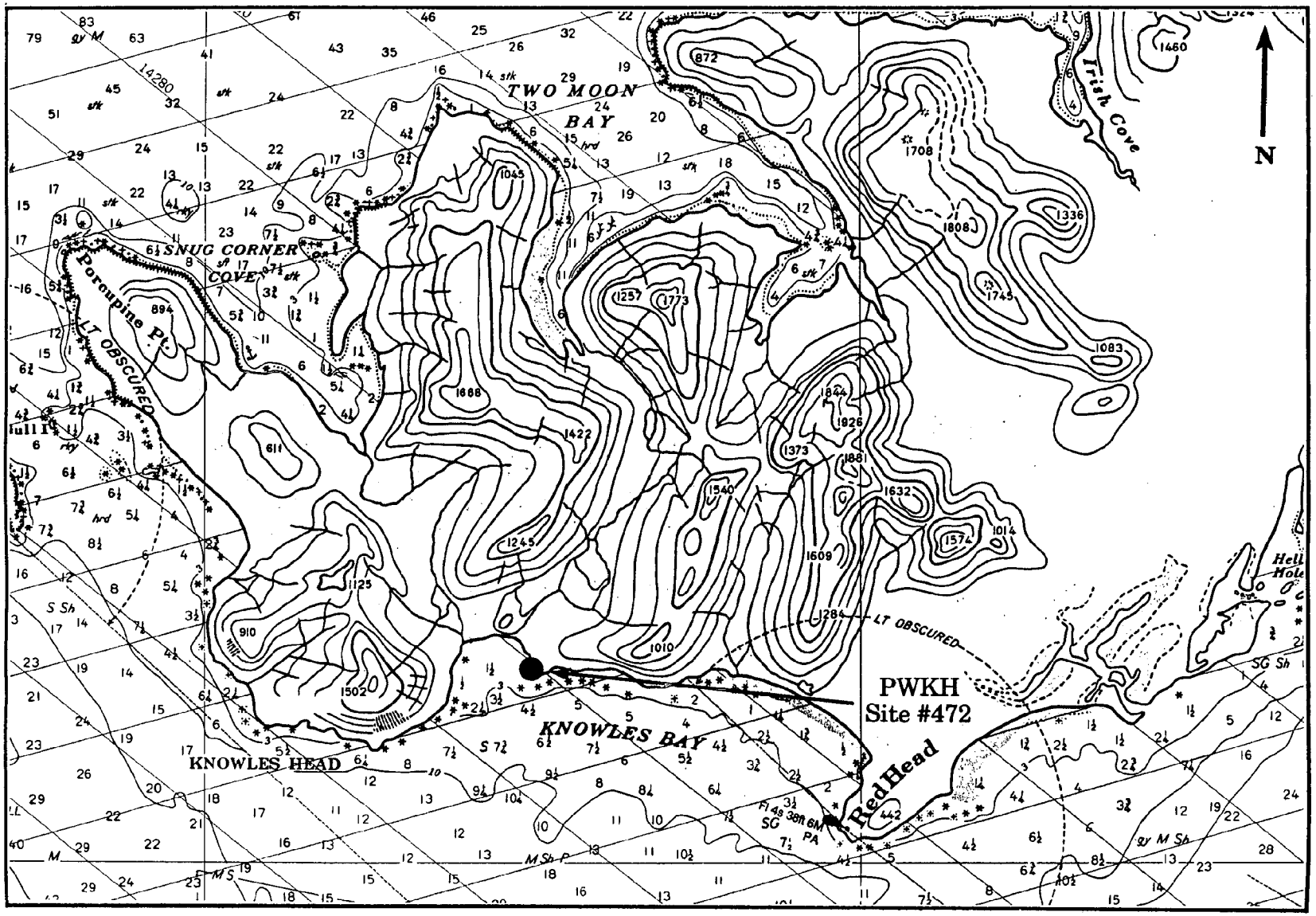
POSSIBLE CONTAMINANTS - There were no obvious visible point sources of contamination in the area. There is a potential for residual contamination from the *Exxon Valdez* oil spill that occurred a few years ago.

ENVIRONMENTAL DATA

Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	30.0	3.5	29 March 1995



Site #472 (PWKH), Knowles Head, Prince William Sound



Site #472 (PWKH), Knowles Head, Prince William Sound (from chart 16708).

Site #472 (PWKH), Knowles Head, Prince William Sound

GERG SITE NUMBER - 473 **DESIGNATOR** -PVMC

SITE - MINERAL CREEK FLATS, PORT VALDEZ, AK

NOMINAL SITE CENTER - 61°07.97'N 147°27.66'W

LOCATED ON NOS CHART # - 16707

SITE ACCESS - This site can be accessed by small boat relatively easily from Valdez. There is a boat ramp in the small harbor.

SITE DESCRIPTION - The nominal site center is on the shoreline just to the east of the mouth of Gold Creek, which lies to the west of Mineral Creek ~ 5 miles west of Valdez on the north side of Port Valdez.

OYSTER COLLECTIONS

1995 *Mytilus edulis* mussels are abundant throughout the area, occurring in a wide band along the intertidal zone. Most of the mussels were fairly small, as the area is iced-in during the winter months.

SEDIMENT COLLECTIONS

1995 None.

SAMPLING METHODS

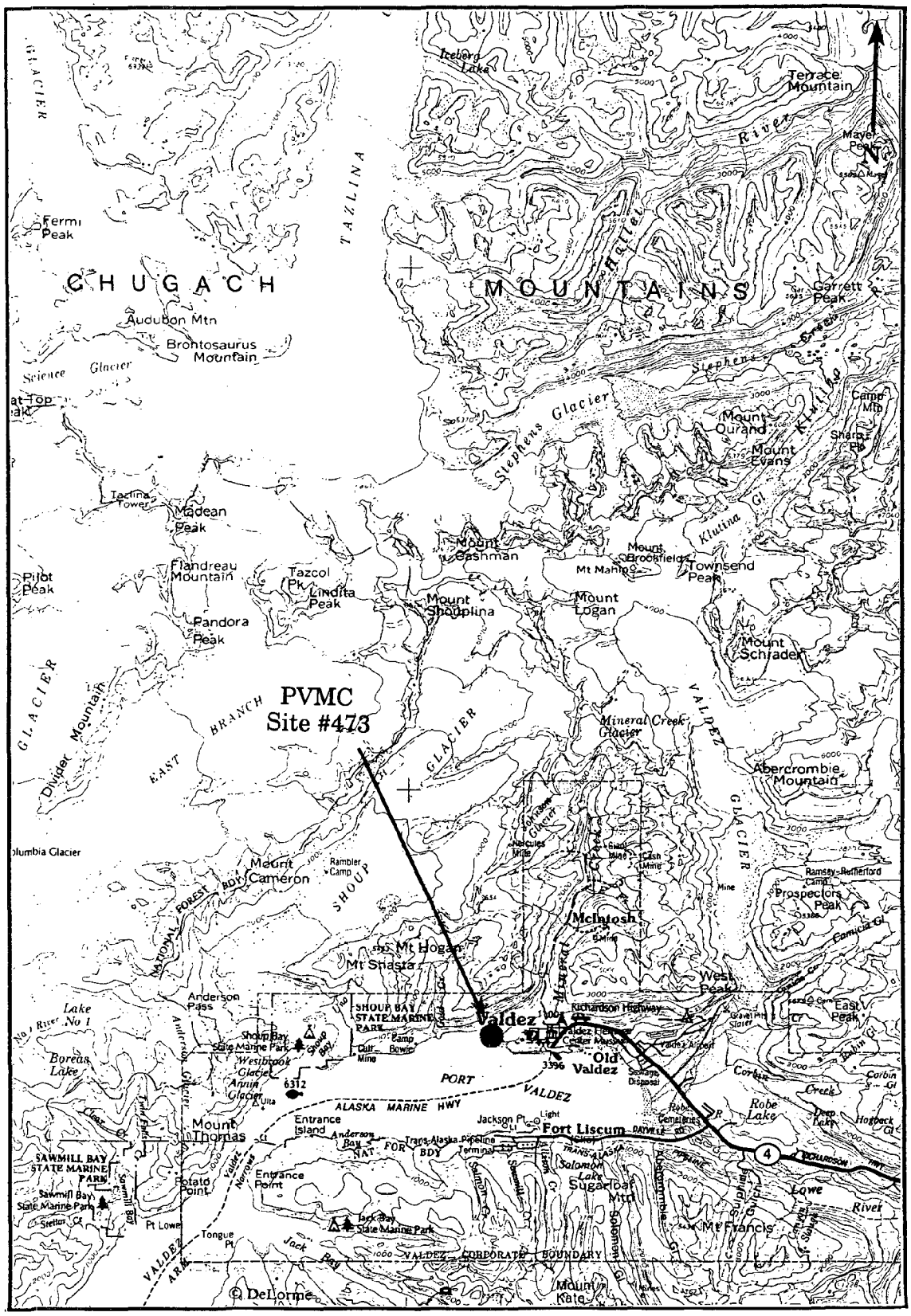
Bivalves - hand
Sediments - NA

WATER DEPTH - + 2.0 m MLLW

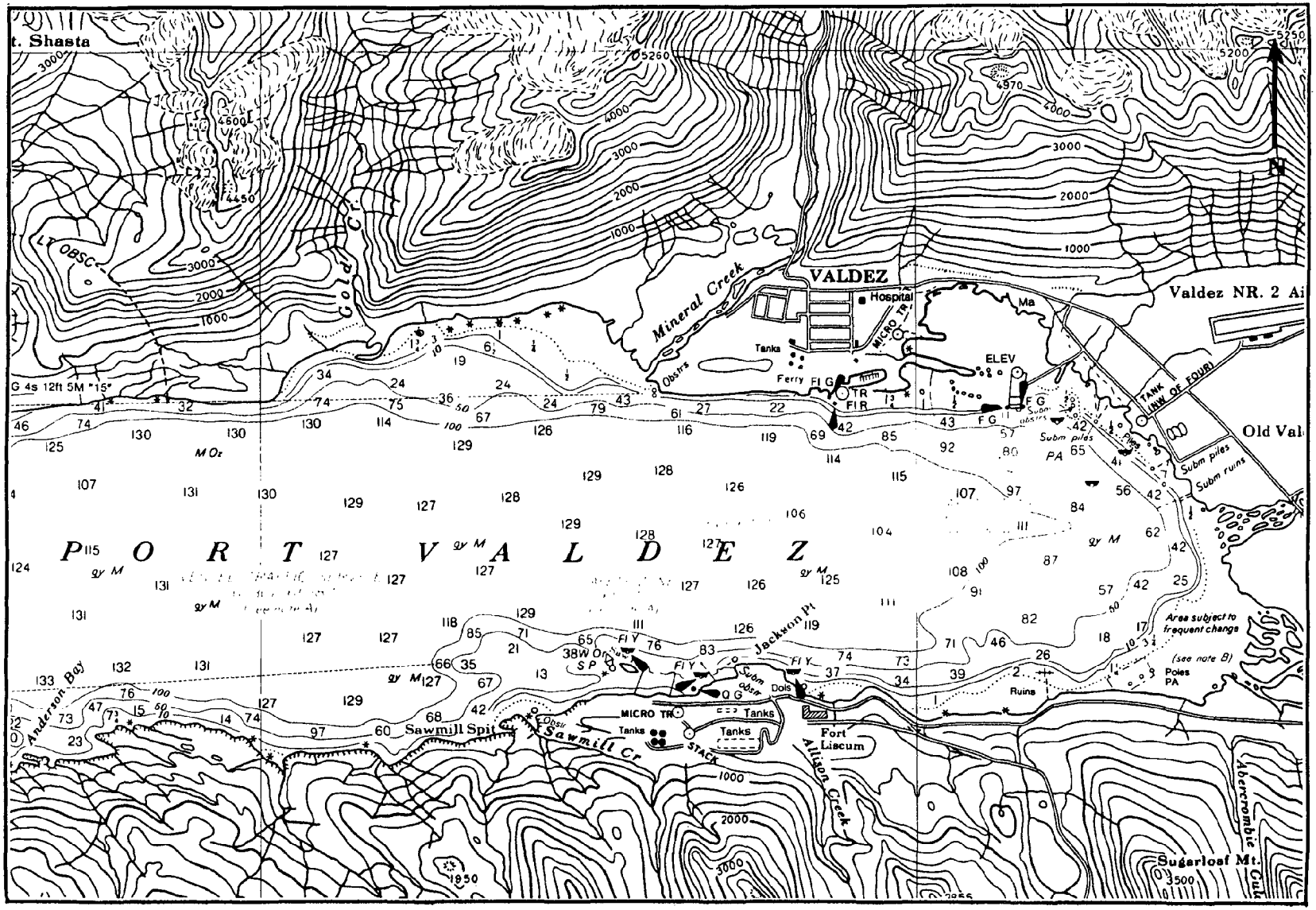
POSSIBLE CONTAMINANTS - The Port of Valdez lies at the southern end of the Trans-Alaska Oil Pipeline, and serves as a large oil terminal and storage depot. The potential for a large oil spill is tremendous, and this was unfortunately borne out when the *Exxon Valdez* ran aground on Bligh Reef a few years ago. The effects of this spill will probably be seen for years to come. The port supports a sizable commercial fishing fleet throughout the year, and is also a popular stop on the cruize ship route through Prince William Sound.

ENVIRONMENTAL DATA

Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	30.0	6.0	13 April 1995



Site #473 (PVMC), Mineral Creek Flats, Port Valdez



Site #473 (PVMC), Mineral Creek Flats, Port Valdez (from chart 16707).

GERG SITE NUMBER - 474 **DESIGNATOR** -UISB

SITE - SIWASH BAY, UNAKWIK INLET, AK

NOMINAL SITE CENTER - 60°57.65'N 147°38.76'W

LOCATED ON NOS CHART # - 16700

SITE ACCESS - This site is a truly remote one, and can only be reached by seaplane or a small boat launched from a larger vessel. Siwash Bay, off Unakwik Inlet, lies some ninety miles west of Valdez. The area is iced-in during the winter months (quite often through to the end of March), and this inhibits access to the area.

SITE DESCRIPTION - The nominal site center is in a small cove on the south side, near the island at the entrance to the inlet. The three Stations are located along the rocky shoreline, just above the low water mark.

OYSTER COLLECTIONS

1995 There were very few *Mytilus edulis* mussels to be found in the area, and the three Stations were not differentiated due to the lack of the sample size. There were only enough mussels for one consolidated sample. The broken ice was still very thick along the shoreline, and this was a contributing factor to the lack of mussels.

SEDIMENT COLLECTIONS

1995 None.

SAMPLING METHODS

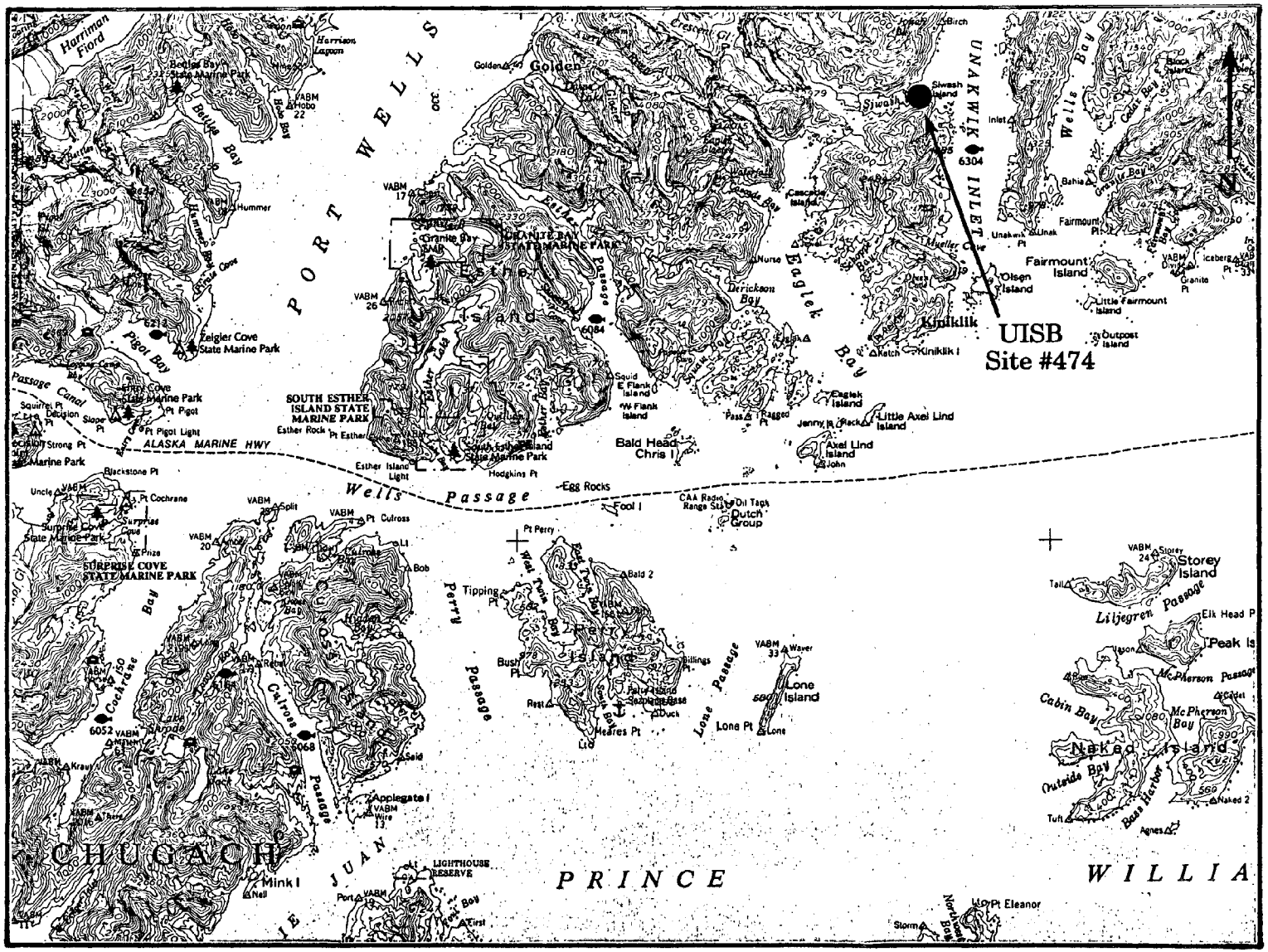
Bivalves - hand
Sediments - NA

WATER DEPTH - + 1.0 m MLLW

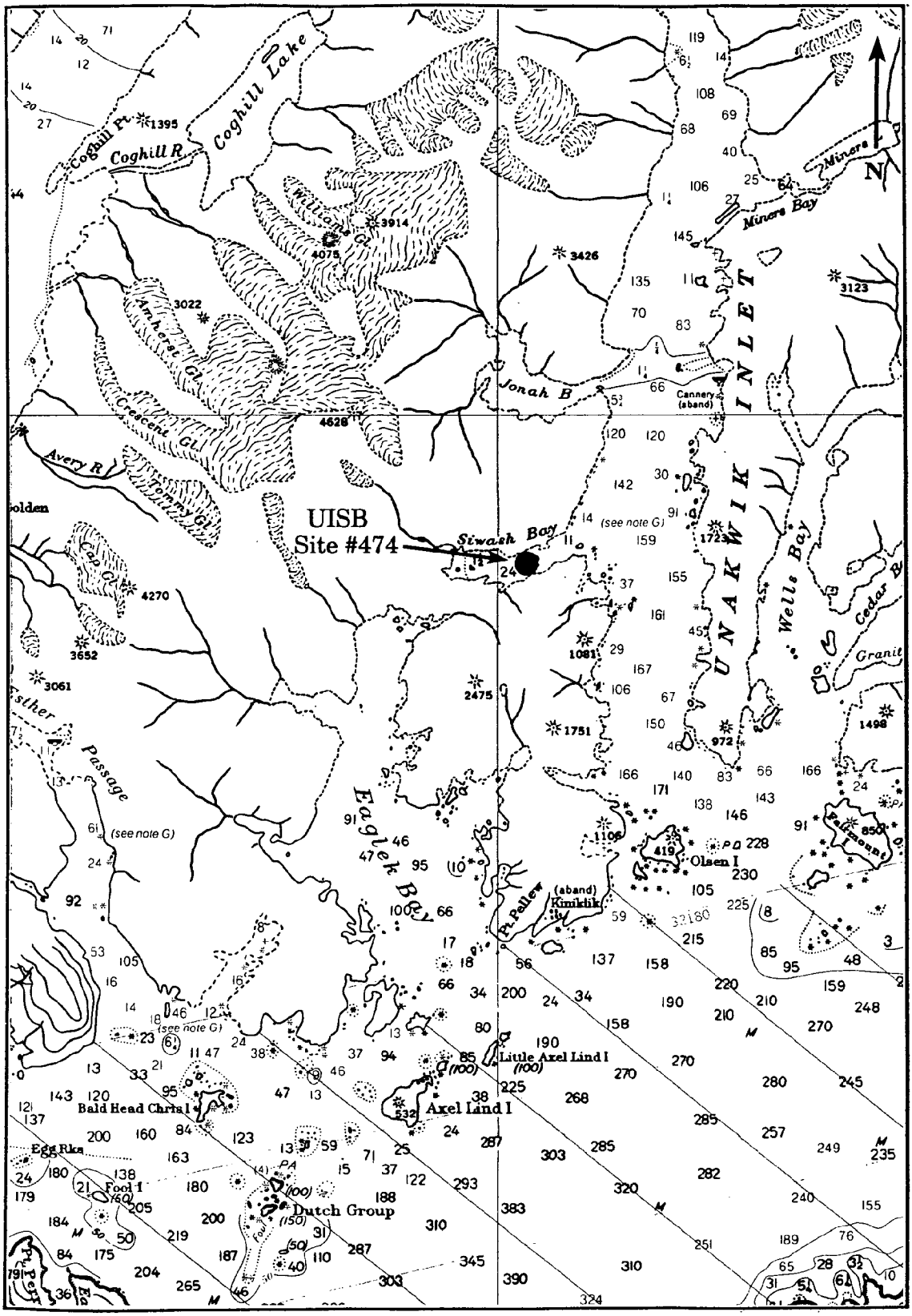
POSSIBLE CONTAMINANTS - There are no obvious vizible point sources of contamination in the area. The site is a remote one, located well-off the usual beaten track.

ENVIRONMENTAL DATA

Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	-	7.0	13 April 1995



Site #474 (UISB), Siwash Bay, Unakwik Inlet



Site #474 (UISB), Siwash Bay, Unakwik Inlet (from chart 16700).

GERG SITE NUMBER - 475 **DESIGNATOR** -PWDI

SITE - DISK ISLAND, PRINCE WILLIAM SOUND, AK

NOMINAL SITE CENTER - 60°29.58'N 147°39.35'W

LOCATED ON NOS CHART # - 16705

SITE ACCESS - This is another remote site in south-western Prince William Sound, just to the north of Knight Island. Access to the area is limited to a few options - a seaplane ride out of either Seward or Valdez, or a long boat ride from either one of these ports.

SITE DESCRIPTION - The site is located on the southwest side of Disk Island, in a small cove facing Louis Bay. The bivalves are located in a wide band on the rocks in the intertidal zone. The samples were collected from a 30 meter long transect, previously set up to monitor the effects of the *Exxon Valdez* oil spill.

OYSTER COLLECTIONS

1995 Small *Mytilus edulis* mussels were abundant throughout the area, occuring in dense patches and under/in-between the rocks.

SEDIMENT COLLECTIONS

1995 The sediment sample was collected from the same area as were the mussels.

SAMPLING METHODS

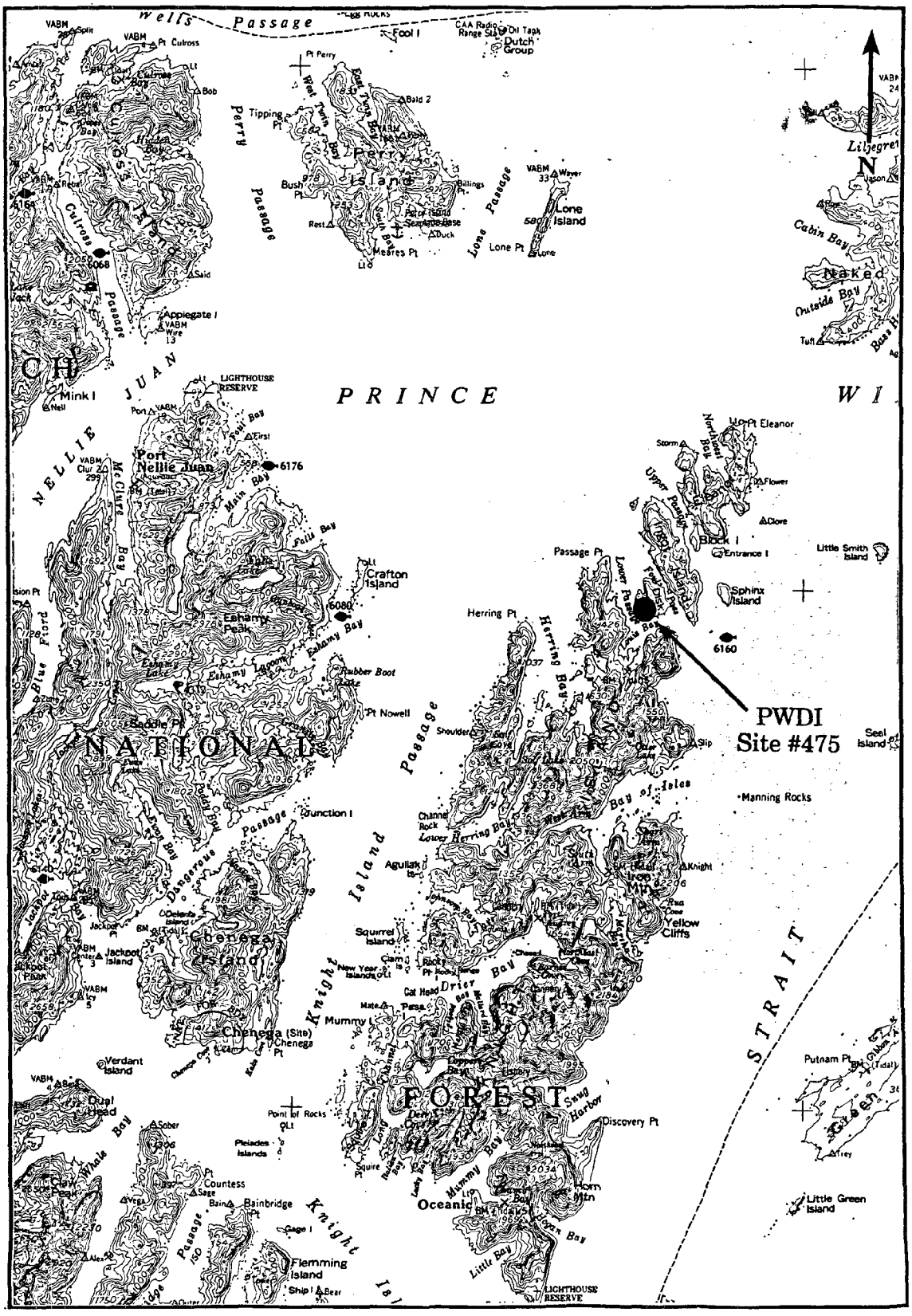
Bivalves - hand
Sediments - hand, Teflon scoop

WATER DEPTH - + 1.5 m MLLW

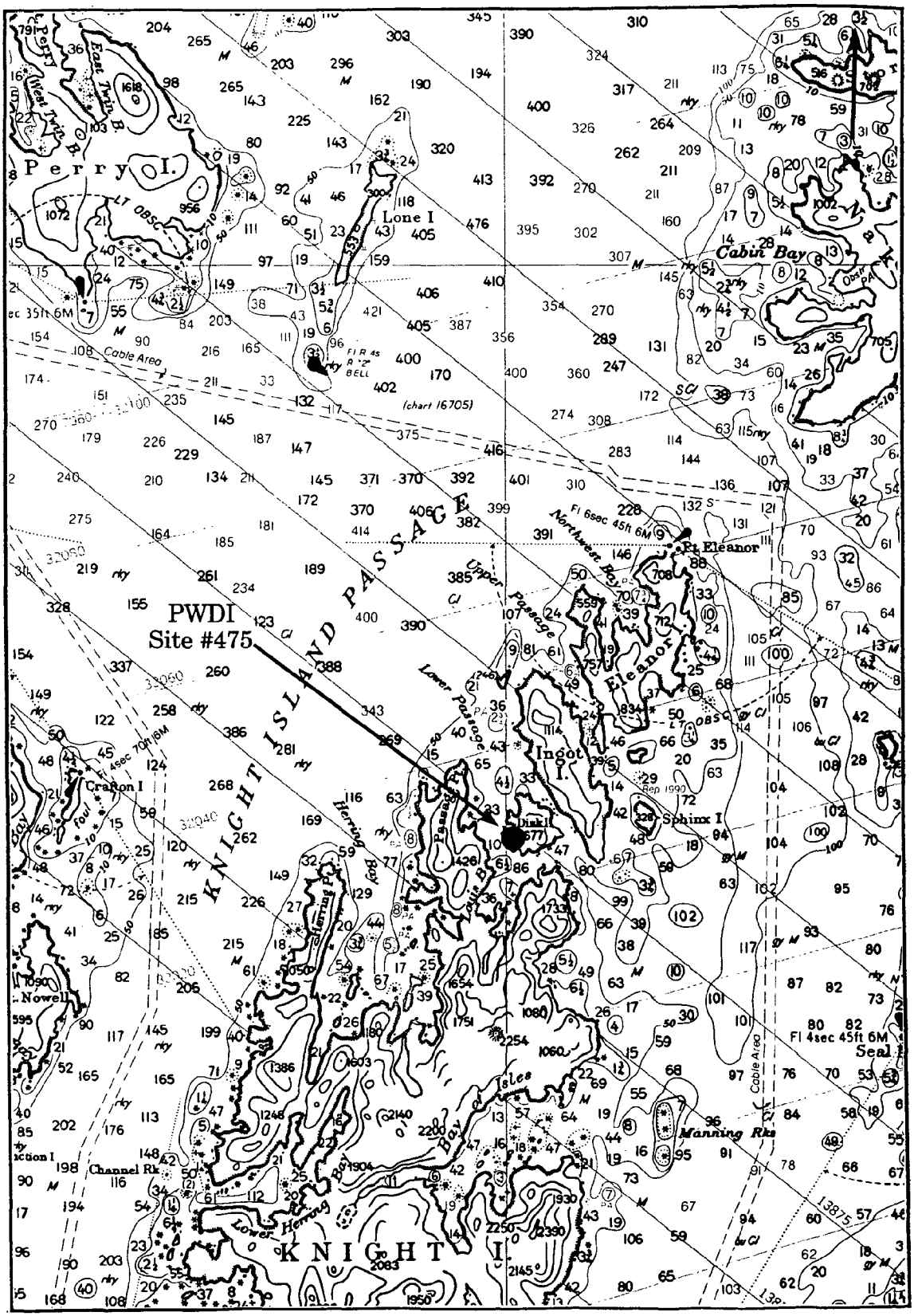
POSSIBLE CONTAMINANTS - There are no obvious visible point sources of contamination in the area. However, when the samples were collected there was a visible oily sheen on the adjacent cobble/pebble beach area. On further investigation, oil "mousse" was found under the rocks and cobbles and in between the bivalves in the mussels mat areas. This area was heavily oiled after the *Exxon Valdez* oil spill a few years ago.

ENVIRONMENTAL DATA

Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	30.0	3.5	28 March 1995



Site #475 (PWDI), Disk Island, Prince William Sound



Site #475 (PWDI), Disk Island, Prince William Sound (from chart 16705).

Site #475 (PWDI), Disk Island, Prince William Sound

GERG SITE NUMBER - 476 **DESIGNATOR** -GASL

SITE - SLEEPY BAY, PRINCE WILLIAM SOUND, AK

NOMINAL SITE CENTER - 60°04.04'N 147°49.53'W

LOCATED ON NOS CHART # - 16702

SITE ACCESS - This remote site is to the south of Prince William Sound, on the western side of Montague Strait. Sleepy Bay lies at the northern end of Latouche Island. Access to the site is obviously fairly limited, and involves either a long seaplane ride or an even longer boat trip. A small boat has to be deployed from a larger vessel, so as to gain access to the shoreline.

SITE DESCRIPTION - The site is located on the northwestern corner of Sleepy Bay. The rocky shoreline is interspersed with cobble/pebble beaches, with the conifer forest extending down to the rocks. The samples were collected from a previously established 30 meter long transect, which is used to monitor the effects of the *Exxon Valdez* oil spill.

OYSTER COLLECTIONS

1995 *Mytilus edulis* mussels occur throughout the area, growing on/in-between the rocks and pebbles on the shoreline. The wide intertidal zone is generally covered with algae and mussels. The mussel population varied from one end of the transect to the other - from dense to scarse.

SEDIMENT COLLECTIONS

1995 The sediment sample was collected adjacent to the mussel transect line.

SAMPLING METHODS

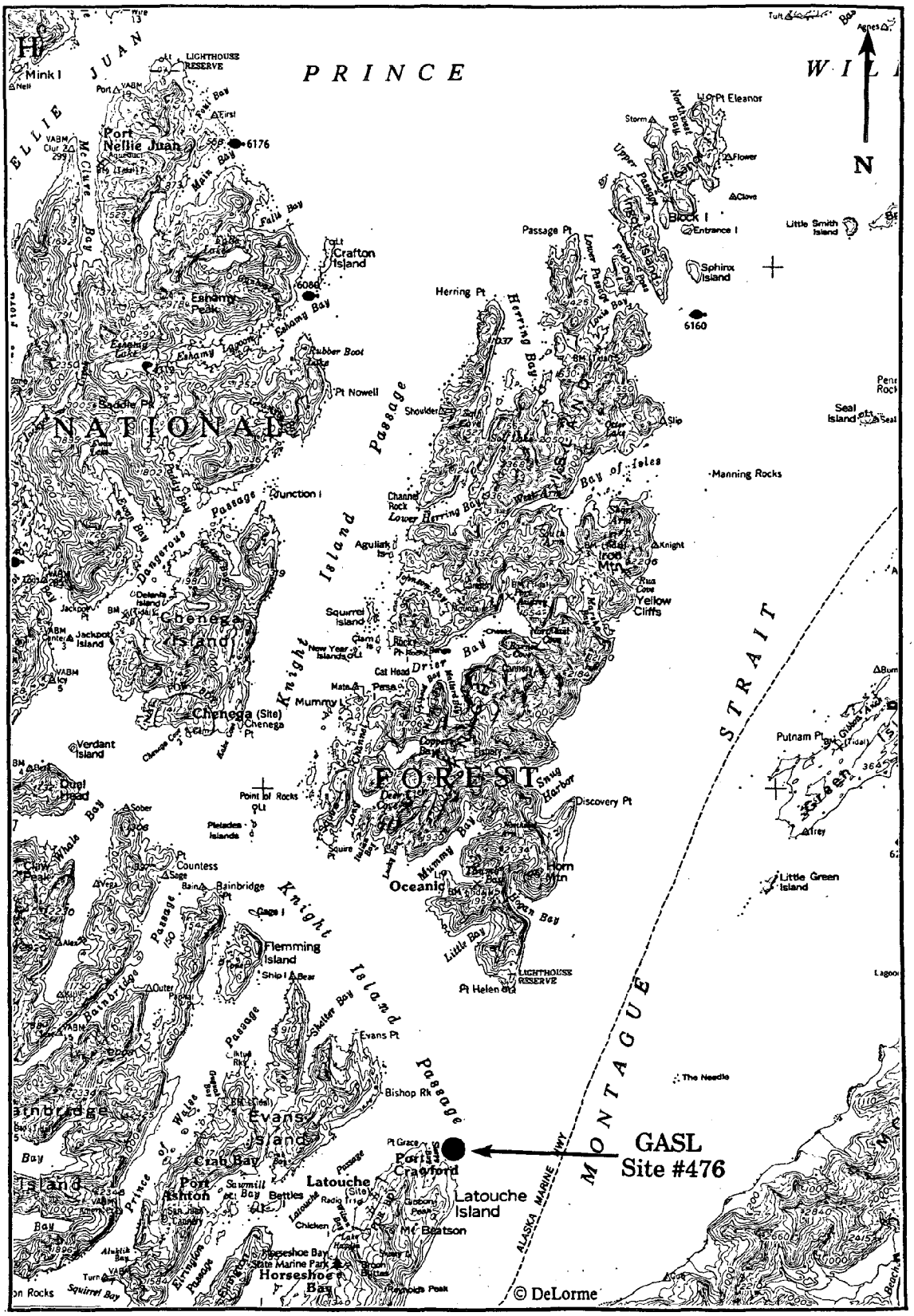
Bivalves - hand
Sediments - hand, Teflon scoop

WATER DEPTH - + 2.2 m MLLW

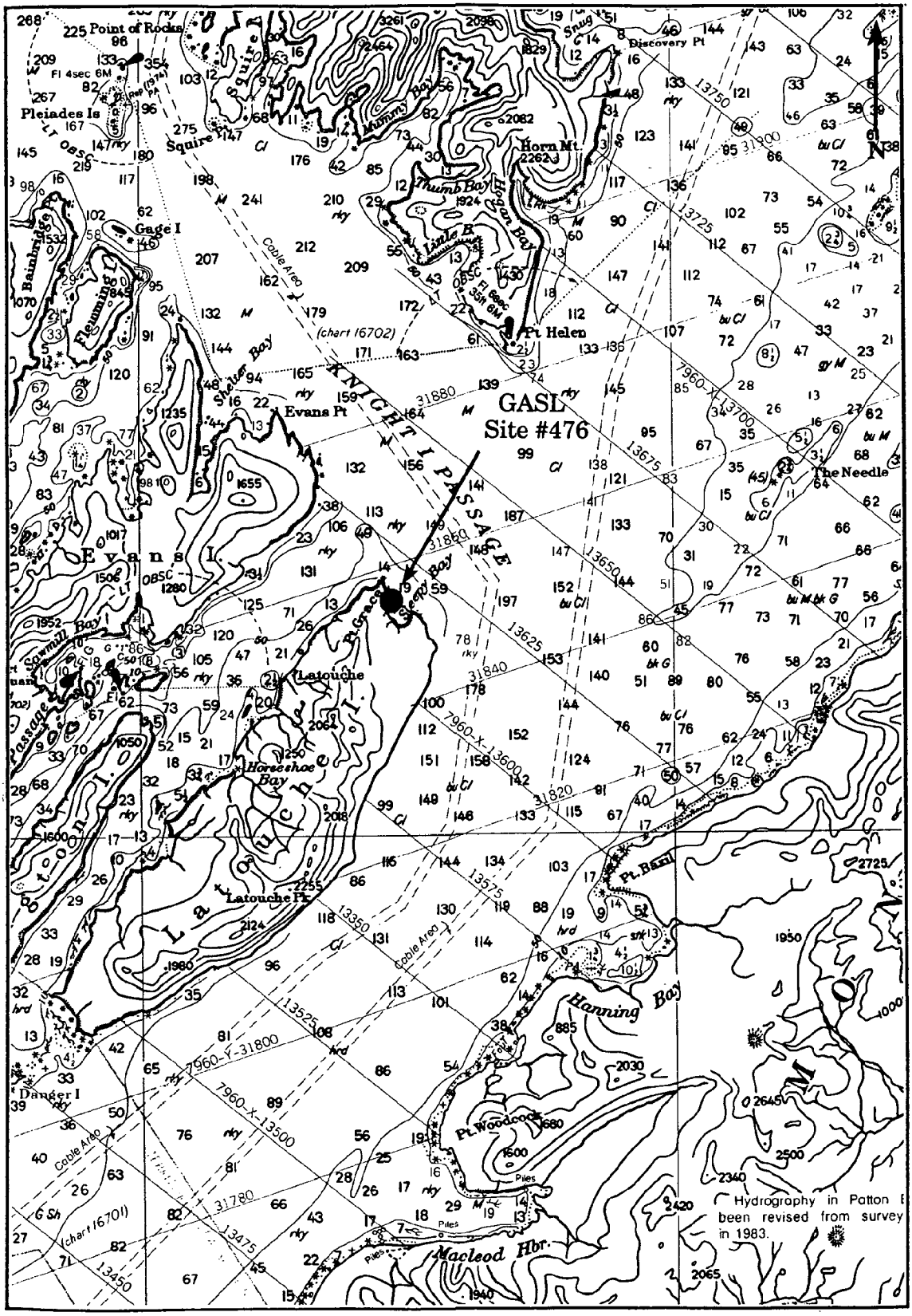
POSSIBLE CONTAMINANTS - There were no obvious visible point sources of contamination in the area. However, the area may have been contaminated after the *Exxon Valdez* oil spill.

ENVIRONMENTAL DATA

Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	31.0	6.0	28 March 1995

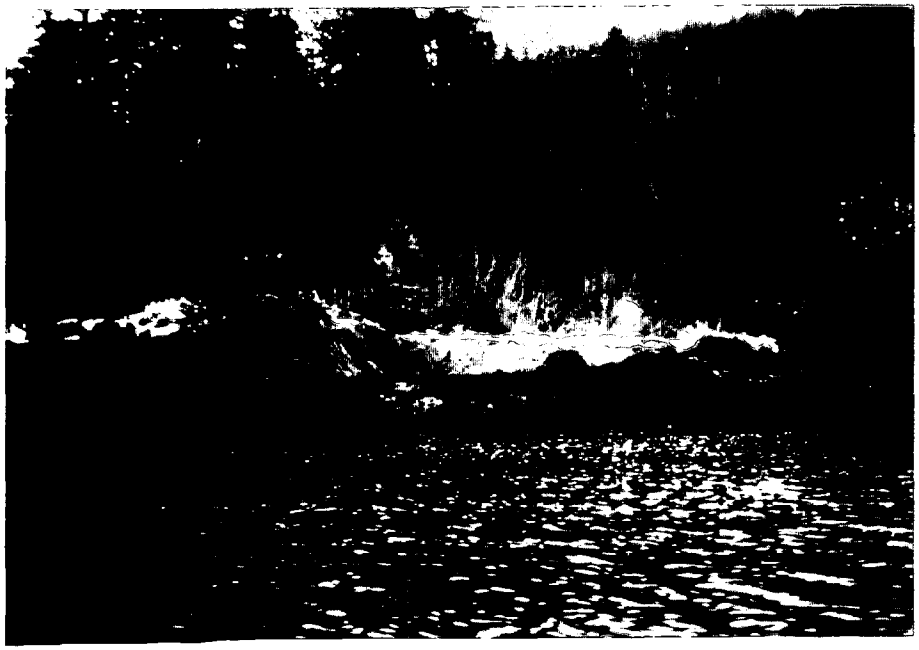


Site #476 (GASL), Sleepy Bay, Gulf of Alaska



Site #476 (GASL), Sleepy Bay, Gulf of Alaska (from chart 16702).

Site #476 (GASL), Sleepy Bay, Gulf of Alaska



GERG SITE NUMBER - 477 **DESIGNATOR** -GAWB

SITE - WINDY BAY, GULF OF ALASKA, AK

NOMINAL SITE CENTER - 59°13.12'N 151°31.02'W

LOCATED ON NOS CHART # - 16645

SITE ACCESS - This remote site lies at the southwestern end of the Kenai Peninsular. Windy Bay is located to the north of the Chugach Islands (East Chugach Is.) in the Kennedy Entrance, between the Kenai Peninsular and the Kodiak Islands. Here again, access is limited due to the remoteness of the site. Access is gained via a seaplane ride from Homer, or a long open water boat ride.

SITE DESCRIPTION - The Windy Bay site is located in a small cove on the south side of the bay, to the northeast of Badger Hill. The samples were collected from a previously established 30 meter long transect on the rocky shoreline.

OYSTER COLLECTIONS

1995 *Mytilus edulis* mussels were abundant throughout the area, in the intertidal zone.

SEDIMENT COLLECTIONS

1995 The sediment sample was collected adjacent to the mussel transect line.

SAMPLING METHODS

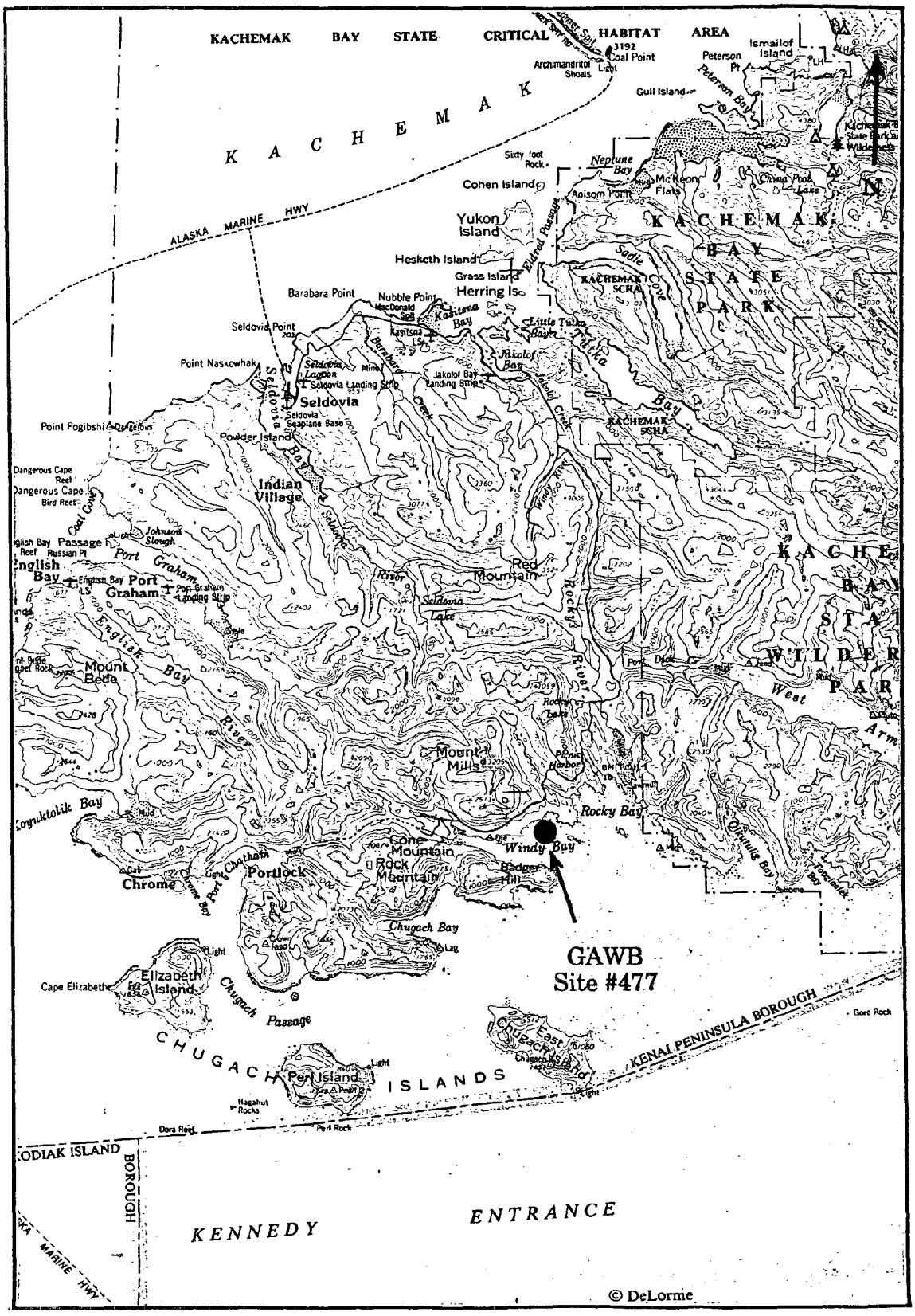
Bivalves - hand
Sediments - hand, Teflon scoop

WATER DEPTH - + 2.14 m MLLW

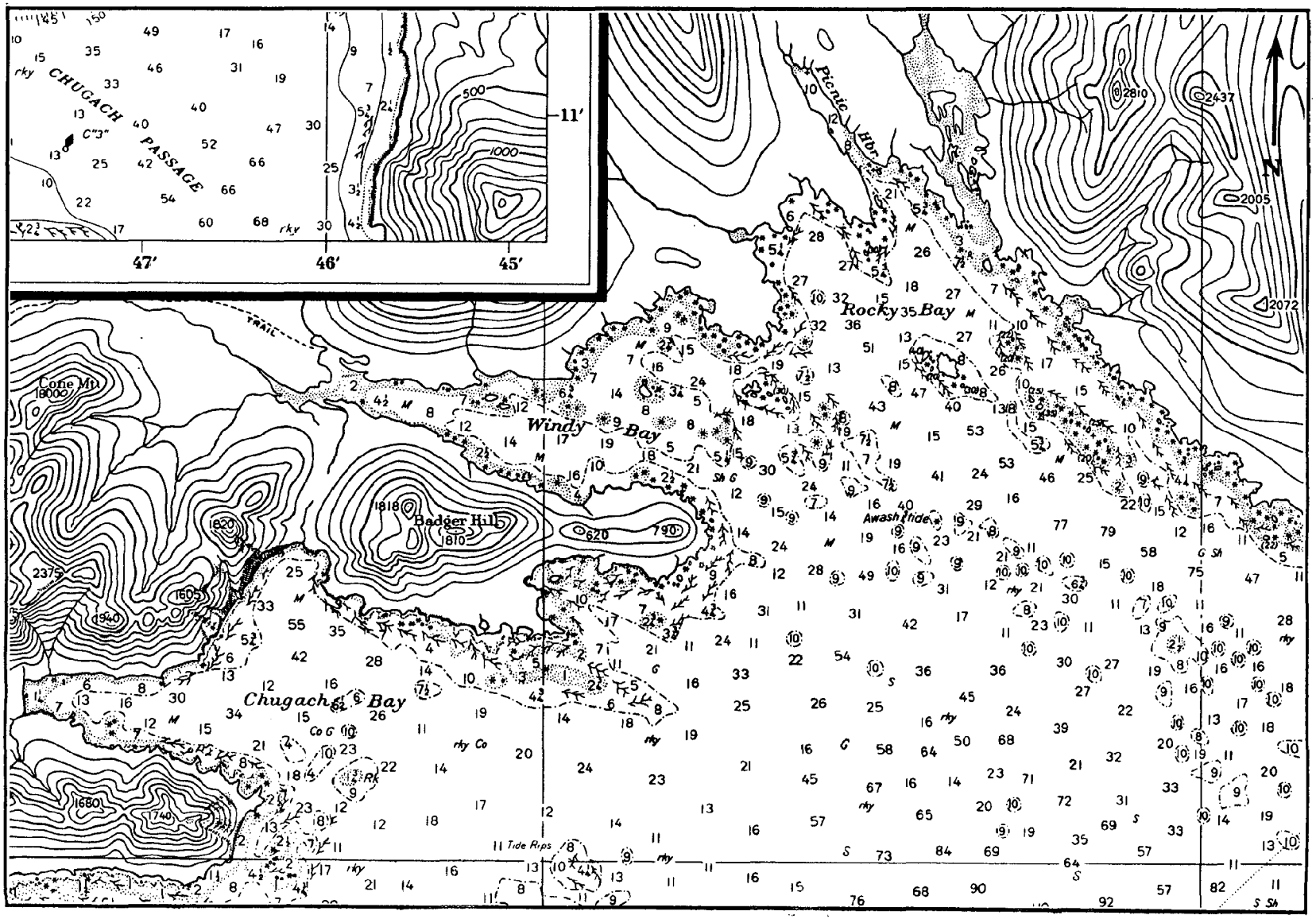
POSSIBLE CONTAMINANTS - There were no obvious visible point sources of contamination in the area. The area is a remote one, visited by only by a few hunters and fishermen.

ENVIRONMENTAL DATA

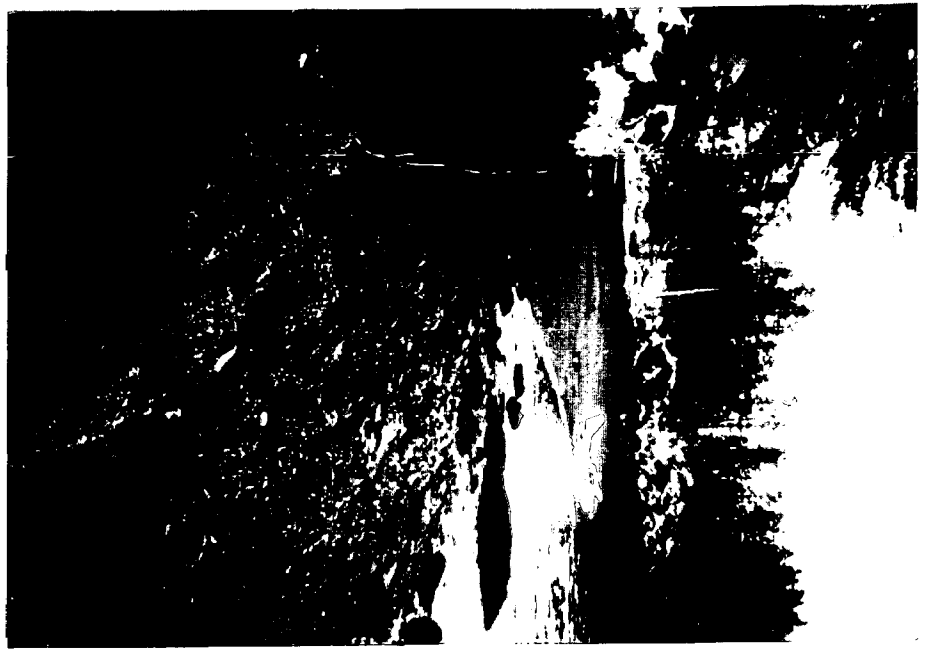
Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	30.0	2.0	20 March 1995



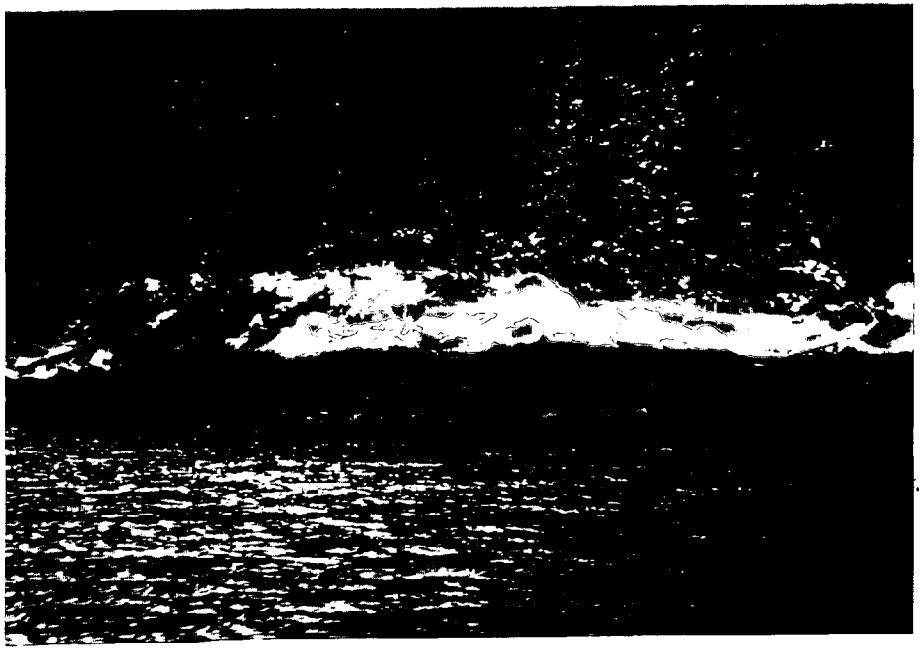
Site #477 (GAWB), Windy Bay, Gulf of Alaska



Site #477 (GAWB), Windy Bay, Gulf of Alaska (from chart 16645).



Site #477 (GAWB), Windy Bay, Gulf of Alaska



GERG SITE NUMBER - 478 **DESIGNATOR** -CIHS

SITE - HOMER SPIT, COOK INLET, AK

NOMINAL SITE CENTER - 59°36.87'N 151°26.65'W

LOCATED ON NOS CHART # - 16645

SITE ACCESS - This site is easily accessed by vehicle, with a short walk out onto the mudflat at low tide. The site is located on the northeast side of Homer Spit. From the Tesora Alaska and Texaco gas stations at the corner of Ocean Drive and Homer Spit, follow the road out about 2.75 miles towards Coal Point (at the end of Homer Spit). Turn left onto a small dirt road that continues northeast for about 30 meters and then ends. From here, walk out some 75 meters to the shoreline where the site is located.

SITE DESCRIPTION - The site is situated along the shoreline of the extensive mudflats to the northeast of Homer Spit. Durint the winter months, the entire area is frozen over with a thick (0.5 - 1.0 meter) layer of ice. Along the shoreline, the layer of ice is broken up and the mussels can be found by searching along these breaks.

OYSTER COLLECTIONS

1995 Bivalve collection was hampered by the fact that the entire area was covered by broken ice, up to a meter thick in places. *Mytilus edulis* mussels were found under the ice, growing on the frozen intertidal mud flat.

SEDIMENT COLLECTIONS

1995 The sediment samples were collected from the same stations as were the bivalves.

SAMPLING METHODS

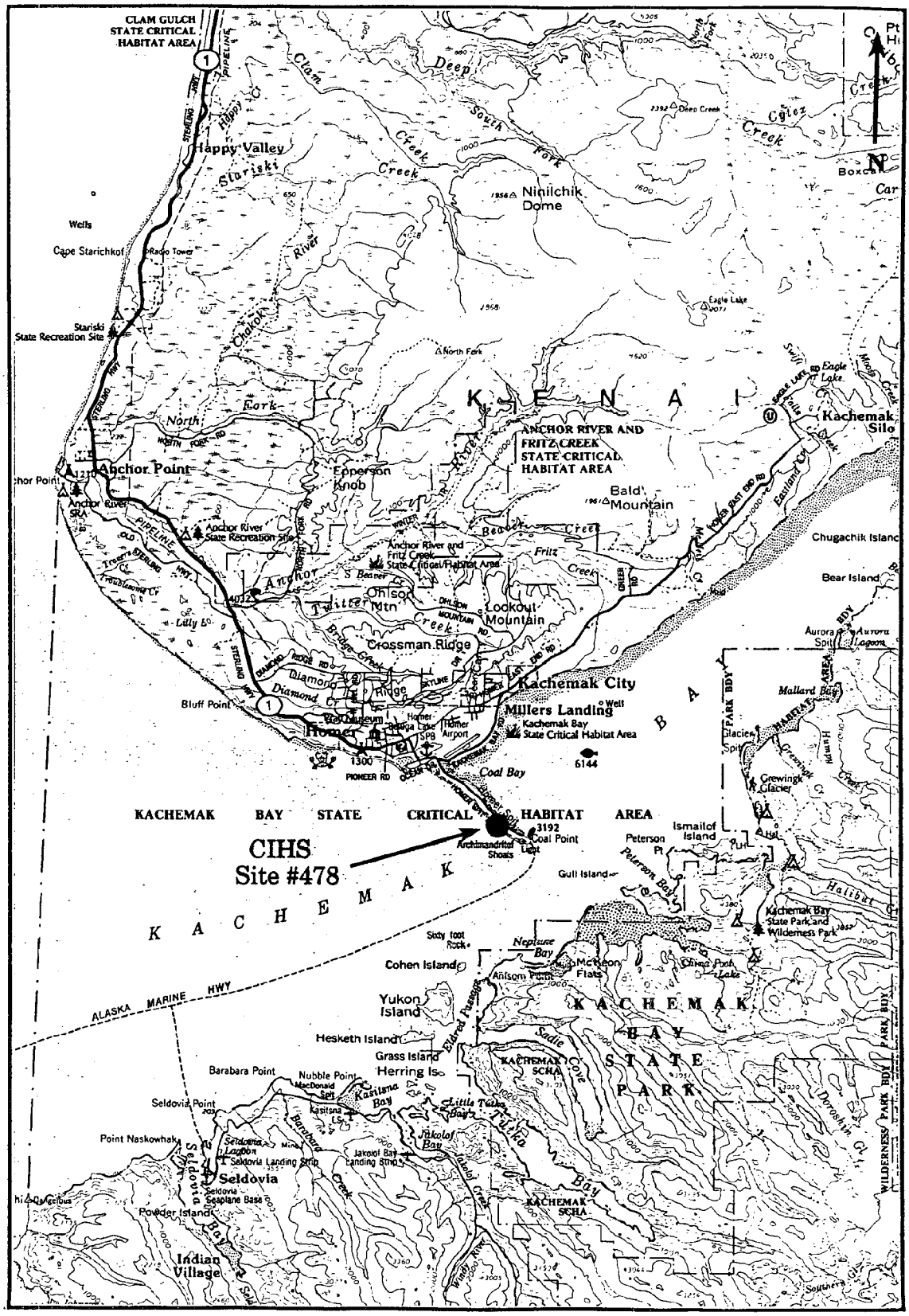
Bivalves - hand
Sediments - hand, Teflon scoop

WATER DEPTH - + 0.5 m MLLW

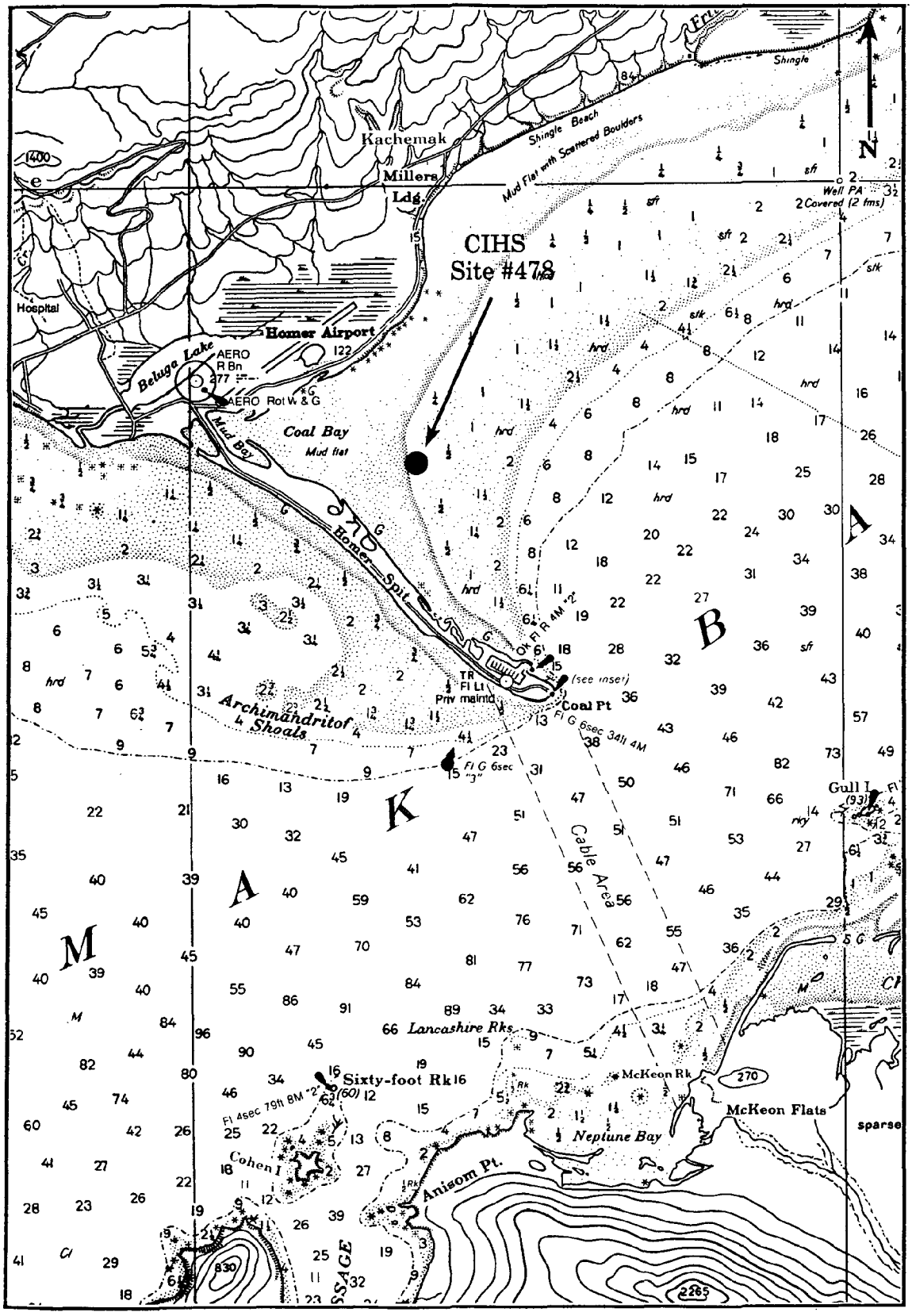
POSSIBLE CONTAMINANTS - There were no really obvious point sources of contamination in the area. There is the potential for contamination from the nearby Homer Spit harbor and marina, as well as that from municipal discharges.

ENVIRONMENTAL DATA

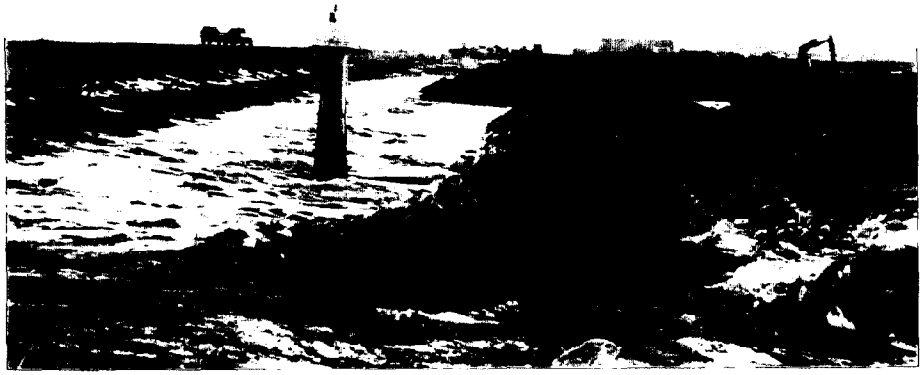
Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	30.0	0.0	13 March 1995



Site #478 (CIHS), Homer Spit, Cook Inlet



Site #478 (CIHS), Homer Spit, Cook Inlet (from chart 16645).



Site #478 (CIHS), Cook Inlet Homer Spit.

GERG SITE NUMBER - 479 **DESIGNATOR** -GASH

SITE - SHUYAK HARBOR, GULF OF ALASKA, AK

NOMINAL SITE CENTER - 58°30.06'N 152°37.31'W

LOCATED ON NOS CHART # - 16605

SITE ACCESS - This remote site lies on Shuyak Island, which is on the south side of the Stevenson Entrance between the Gulf of Alaska and Shelikof Strait/Cook Inlet. Shuyak Island lies to the north of Afognak Island, which lies just to the north of Kodiak Island. Access to the site is limited to either a long open water boat ride, or by seaplane. The departure point can be from either Homer (to the north) or from Kodiak (to the south and somewhat more remote).

SITE DESCRIPTION - Shuyak Harbor is a small cove situated on the south-western corner of Shuyak Island, to the west of Port William. The site is located on the eastern side of the cove, on an established 30 meter long transect.

OYSTER COLLECTIONS

1995 *Mytilus edulis* mussels were abundant throughout the area, occurring in a wide band along the intertidal zone.

SEDIMENT COLLECTIONS

1995 The sediment sample was collected adjacent to the mussel transect.

SAMPLING METHODS

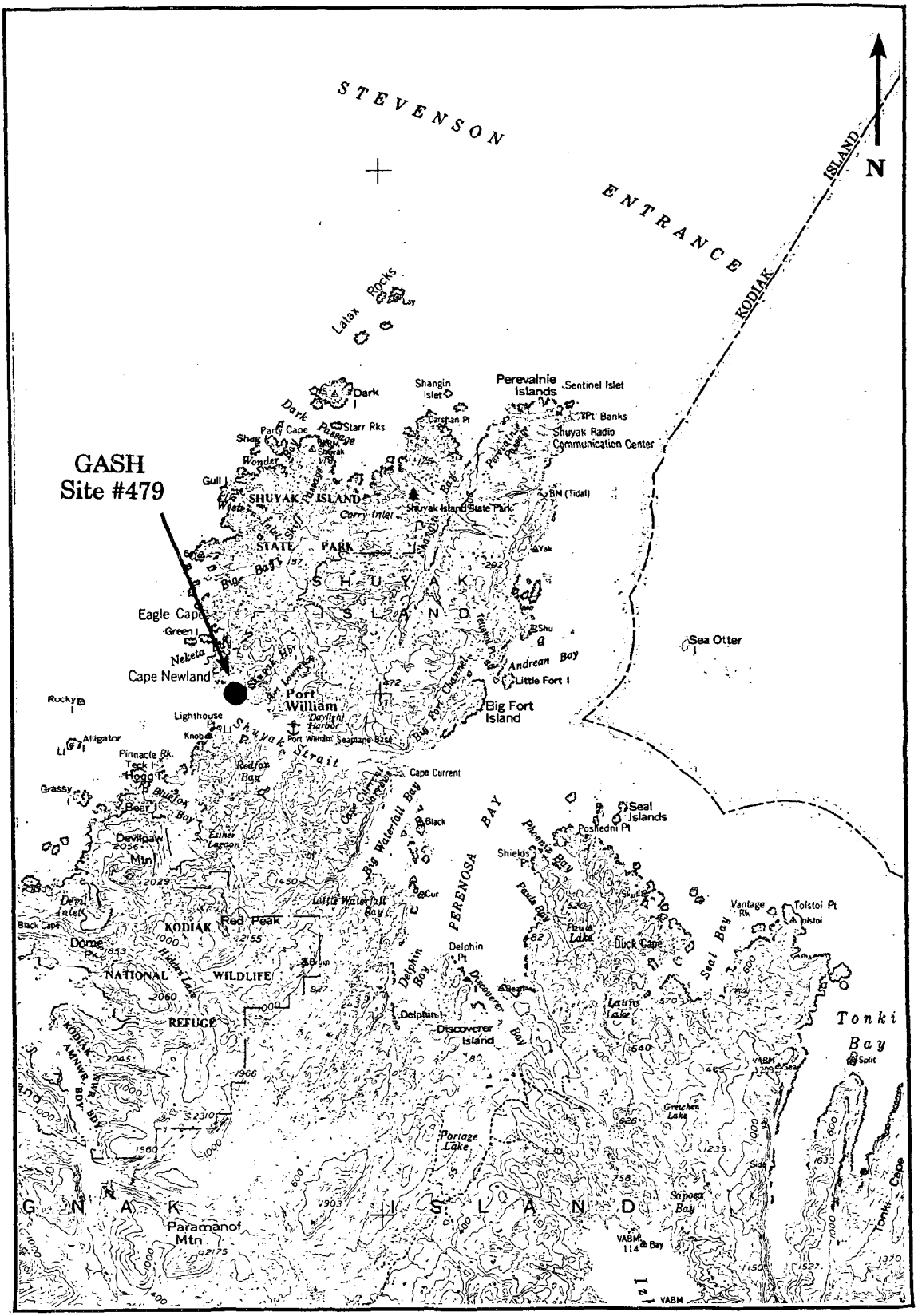
Bivalves - hand
Sediments - hand, Teflon scoop

WATER DEPTH - + 2.0 m MLLW

POSSIBLE CONTAMINANTS - There were no obvious visible point sources of contamination in the area.

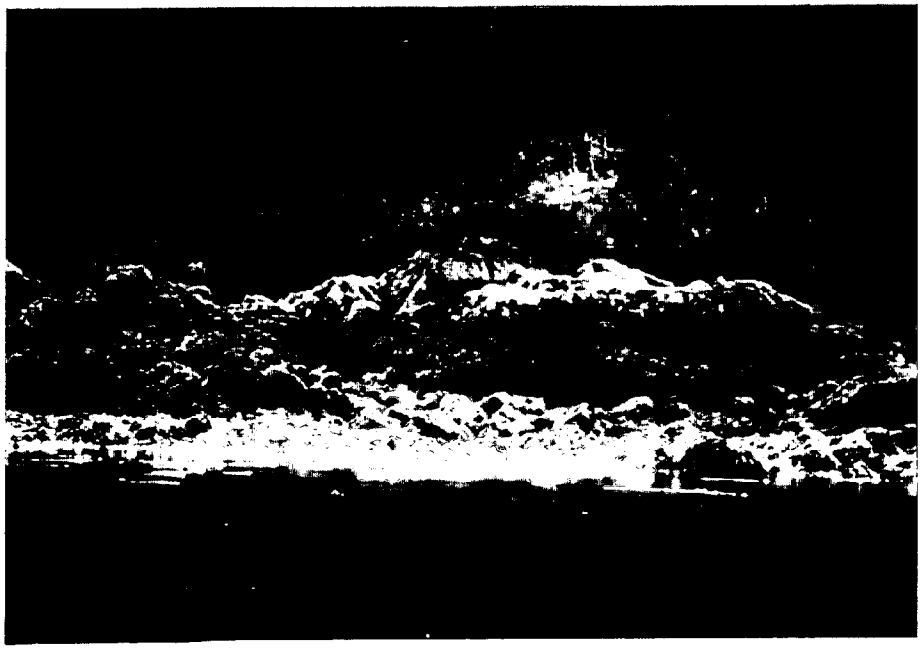
ENVIRONMENTAL DATA

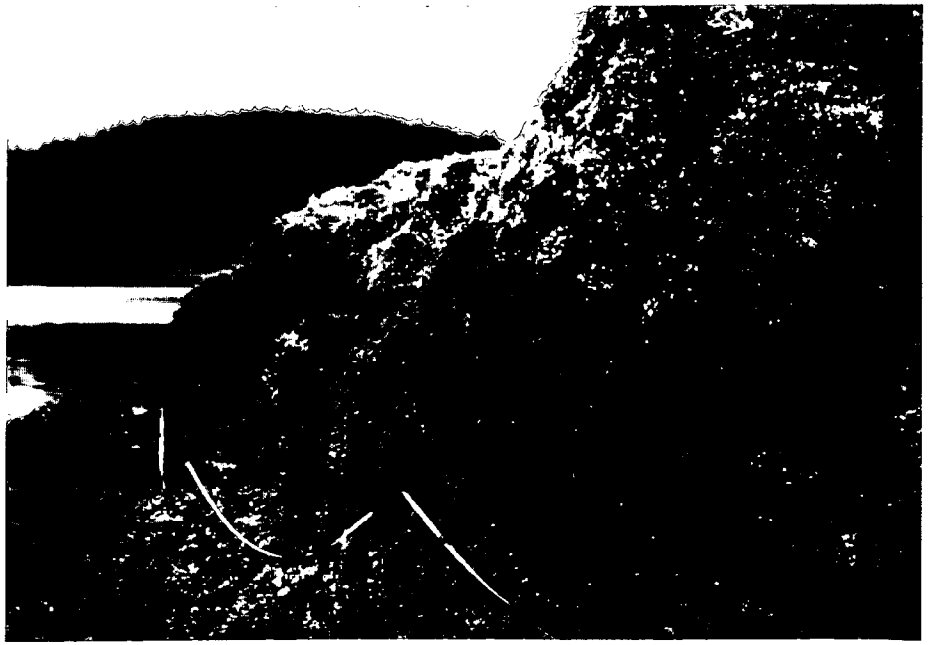
Year	Salinity (‰)	Temperature (°C)	Dates Sampled
1995	34.0	2.5	19 March 1995



Site #479 (GASH), Shuyak Harbor, Gulf of Alaska

Site #479 (GASH), Shuyak Harbor, Gulf of Alaska





Appendix A

Field Station Data

NOAA NS&T MUSSEL WATCH PROJECT - 1995 - FIELD STATION DATA - WEST COAST

Site Code	Site Name & Location	Deg Min Latitude	Deg Min Longitude	Type	M/D/Y Date	Collection Method	Bottom Type	Scientist	Species	(m) Depth	°C Temp	0/00 Salinity	Local Time High Water	Local Time Low Water	Tidal Reference	Tidal Range (m)
IBNJ	NORTH JETTY IMPERIAL BEACH	32°35.26'	117°08.01'	B	12/12/94	H	E	Hardin	*M. californianus*	0.5	14.9	24	5:25	12:32	Pt. Loma	1.13
SDCB	CORONADO BRIDGE SAN DIEGO BAY	32°41.19'	117°09.55'	B	12/14/94	H	E	Hardin	*M. edulis*	0.75	14.8	33	6:43	13:49	San Diego	1.31
PLLH	LIGHTHOUSE POINT LOMA	32°40.83'	117°14.93'	B	1/12/95	H	R	Hardin	*M. californianus*	1	15.4	25.5	6:10	13:32	Pt. Loma	1.13
SDHI	HARBOR ISLAND SAN DIEGO BAY	32°43.48'	117°11.68'	B	12/13/94	H	R	Hardin	*M. edulis*	0.5	15	34.5	6:10	13:14	San Diego	1.31
MBVB	VENTURA BRIDGE MISSION BAY	32°46.05'	117°14.52'	B	12/15/94	H	E	Hardin	*M. edulis*	0.75	14.3	35	7:11	14:38	Mission B.	1.16
LJLJ	POINT LA JOLLA LA JOLLA	32°51.09'	117°16.43'	B	1/13/95	H	R	Hardin	*M. californianus*	1	15.6	35	6:54	14:01	La Jolla	1.13
OSBJ	MUNICIPAL BEACH JETTY OCEANSIDE	33°12.10'	117°23.62'	B	1/11/95	H	R	Hardin	*M. californianus*	1	15.3	29	5:23	12:47	Oceanside	1.13
ABWJ	WEST JETTY ANAHEIM BAY	33°44.00'	118°06.06'	B	12/16/94	H	R	Hardin	*M. californianus*	0.75	16.6	32.5	8:34	15:59	Los Patos	1.04
PVRP	ROYAL PALMS STATE PARK PALOS VERDES	33°43.02'	118°19.37'	B	12/17/94	H	R	Hardin	*M. californianus*	0.75	16	24	8:03	15:17	L.A.	1.16
MDSJ	SOUTH JETTY MARINA DEL RAY	33°57.69'	118°27.50'	B	12/18/94	H	R	Hardin	*M. edulis*	0.5	16.1	25	8:37	15:54	S. Monica	1.07
PDPD	POINT DUME POINT DUME	34°00.10'	118°48.52'	B	12/19/94	H	R	Hardin	*M. californianus*	1	15.9	30	9:08	16:31	Pt. Mugu	1.13
SLSL	POINT SAN LUIS SAN LUIS OBISPO BAY	35°09.63'	120°45.35'	B	12/20/94	H	R	Hardin	*M. californianus*	0.5	12.3	29	10:25	16:44	Pt. San L.	1.1
PGLP	LOVERS POINT PACIFIC GROVE	36°37.63'	121°54.99'	B	2/24/95	H	R	Hardin	*M. californianus*	1	14.1	35	5:28	12:42	Monterey	1.1
MBML	MOSS LANDING MONTEREY BAY	36°48.07'	121°47.38'	B	2/24/95	H	R	Hardin	*M. californianus*	0.5	17.4	33	5:26	12:41	Moss L.	1.07
MBES	ELKHORN SLOUGH MONTEREY BAY	36°48.59'	121°47.11'	B	2/28/95	H	E	Hardin	*M. californianus*	0.75	16.2	35	9:22	15:51	Elkhorn S.	1.07
MBSC	POINT SANTA CRUZ MONTEREY BAY	36°57.25'	122°01.48'	B	2/25/95	H	R	Hardin	*M. californianus*	1.25	15	35	6:27	13:28	Santa Cruz	1.07
SFDB	DUMBARTON BRIDGE SAN FRANCISCO	37°30.16'	122°07.28'	B	2/13/95	H	E	Gold	*M. californianus*	0.25	11.8	15	10:42	17:55	Dumbarton	2.01
SFSM	SAN MATEO BRIDGE SAN FRANCISCO	37°34.68'	122°15.22'	B	2/13/95	H	E	Gold	*M. californianus*	0.25	11.8	16.3	10:34	17:37	San Mateo	1.77
SFEM	EMERYVILLE SAN FRANCISCO	37°49.23'	122°19.80'	B	2/14/95	H	R	Gold	*M. californianus*	0	15	14.7	10:44	17:27	Berkeley	1.28
TBSR	SPENGER'S RESIDENCE TOMALES BAY	38°08.97'	122°54.24'	B	2/15/95	H	R	Gold	*M. californianus*	0.25	13	18	11:37	18:38	Tomales B.	1.1
BBBE	BODEGA BAY ENTRANCE BODEGA BAY	38°18.30'	123°03.96'	B	1/13/95	H	R	Gold	*M. californianus*	1.5	10.4	20	9:04	16:01	B. Harbor	1.16
PALH	LIGHTHOUSE POINT ARENA	38°57.18'	123°44.58'	B	1/12/95	H	R	Gold	*M. californianus*	1	11.9	17.7	8:17	15:23	Pt. Arena	1.22
PDSC	SHELTER COVE POINT DELGADA	40°01.35'	124°04.40'	B	1/29/95	H	R	Gold	*M. californianus*	1.75	10.8	20.7	9:03	16:02	Shelter C.	1.28
HMBJ	HUMBOLDT BAY JETTY EUREKA	40°45.85'	124°14.02'	B	12/28/94	H	R	Gold	*M. californianus*	1.5	10.9	20.3	7:20	14:48	Humbolt B.	1.31
EUSB	SAMOA BRIDGE EUREKA	40°49.29'	124°10.28'	B	12/31/94	H	E	Gold	*M. califor/edulis*	0.25	9.5	19.2	10:24	17:25	Samoa	1.65
SGSG	POINT ST. GEORGE CRESCENT CITY	41°44.87'	124°12.46'	B	12/30/94	H	R	Gold	*M. californianus*	1.75	10.2	20.3	8:56	16:09	Crescent C.	1.55
CBRP	RUSSELL POINT COOS BAY	43°25.59'	124°13.17'	B	12/12/94	H	E	Gold	*M. edulis*	0.5	7.9	15	8:29	15:41	Empire	1.49
YBOP	ONEATTA POINT YAQUINA BAY	44°34.51'	123°59.34'	B	12/13/94	H	W	Gold	*M. edulis*	1	7.5	14.7	9:02	16:23	Winant	1.92
YHFC	FOGARTY CREEK YAQUINA BAY	44°50.22'	124°03.12'	B	12/13/94	H	R	Gold	*M. edulis*	1.5	8.9	29	8:47	16:20	Taft	1.52
TBHP	HOBSONVILLE POINT TILLAMOOK BAY	45°32.83'	123°54.45'	B	12/14/94	H	R	Gold	*M. edulis*	1	8.2	8	9:52	17:04	Garibaldi	1.8
CRSJ	SOUTH JETTY COLUMBIA RIVER	46°13.72'	124°01.39'	B	1/30/95	H	R	Gold	*M. edulis*	0.5	6.9	17.7	0:18	18:29	Columbia	1.71
GHWJ	WESTPORT JETTY GRAY'S HARBOR	46°54.70'	124°07.03'	B	1/30/95	H	E	Gold	*M. californianus*	1	6.6	24.3	12:03	18:23	Westport	2.15
PSHC	HOOD CANAL PUGET SOUND	47°49.91'	122°41.31'	B	1/29/95	H	W	Gold	*M. californianus*	2	7.2	23.7	4:17	21:42	Lofall	2.12
SSBI	BUDD INLET SOUTH PUGET SOUND	47°05.96'	122°53.65'	B	12/15/94	H	E	Gold	*M. edulis*	0.5	7.5	23.3	5:11	22:27	Olympia	3.2
WIPP	POSSESSION POINT WHIDBEY ISLAND	47°54.27'	122°22.59'	B	12/16/94	H	R	Gold	*M. edulis*	0.5	8.1	29	5:05	22:19	Glendale	2.25
BBSM	SQUALICUM MARINA BELLINGHAM BAY	48°45.13'	122°29.87'	B	1/28/95	H	R	Gold	*M. edulis*	1.5	7.5	27	13:27	21:14	Bellingham	1.58
KTMP	MOUNTAIN POINT KETCHIKAN	55°17.63'	131°32.88'	B	4/16/95	H	R	Denton	*M. edulis*	0	8	30	0:41	7:02	Ketchikan	3.96
NBES	EAST SIDE NAHKU BAY	59°27.20'	135°20.19'	B	5/7/95	H	R	Pickett	*M. edulis*	0	11.5	12	5:35	12:17	Skagway	4.3
PWSH	SHEEP BAY PRINCE WILLIAM SOUND	60°38.44'	145°59.41'	B/S	3/30/95	H	R	Kennedy	*M. edulis*	0	4	33	0:31	6:41	Pt. Gravina	2.9
PWKH	KNOWLES HEAD - PWS	60°41.27'	146°34.57'	B/S	3/29/95	H	R	Reeder	*M. edulis*	0	3.5	30	0:04	18:18	Pt. Fidalgo	2.9
PVMC	MINERAL CREEK FLATS PORT VALDEZ	61°07.97'	146°27.66'	B	4/13/95	H	R	Kennedy	*M. edulis*	0	6	30	23:58	17:48	Pt. Valdez	2.96
UISB	SIWASH BAY UNAKWIK INLET	60°57.65'	147°38.76'	B	4/13/95	H	R	Kennedy	*M. edulis*	0	7	-	11:41	17:51	Glacier Is.	2.9
PWDI	DISK ISLAND - PWS	60°29.58'	147°39.35'	B/S	3/28/95	H	R	Kennedy	*M. edulis*	0	3.5	30	11:38	17:49	Knight Is.	2.96
GASL	SLEEPY BAY GULF OF ALASKA	60°04.04'	147°49.53'	B/S	3/28/95	H	R	Reeder	*M. edulis*	0	6	31	11;25	17:42	Bainbridge	2.53
GAWB	WINDY BAY GULF OF ALASKA	59°13.12'	151°31.02'	B/S	3/20/95	H	R	Kennedy	*M. edulis*	0	2	30	3:24	9:50	Rocky Bay	3.2

BOTTOM: S=SHELL,M=MUD,E=CONCRETE,N=SAND,H=HASH,C=CLAY,R=ROCK,B=RUBBLE COLLECTION METHOD: H=HAND,D=DREDGE SAMPLE TYPE: B=BIVALVE,S=SEDIMENT

NOAA NS&T MUSSEL WATCH PROJECT - 1995 - FIELD STATION DATA - WEST COAST

Site Code	Site Name & Location	Deg Min Latitude	Deg Min Longitude	Type	M/D/Y Date	Collection Method	Bottom Type	Scientist	Species	(m) Depth	°C Temp	0/00 Salinity	Local Time High Water	Local Time Low Water	Tidal Reference	Tidal Range (m)
CIHS	HOMER SPIT COOK INLET	59°36.87'	151°26.65'	B/S	3/13/95	H	M	Brooks	*M. edulis*	0	0	30	11:49	18:26	Homer	4.79
GASH	SHUYAK HARBOR GULF OF ALASKA	58°30.06'	152°37.31'	B/S	3/19/95	H	R	Kennedy	*M. edulis*	0	2.5	34	3:36	10:05	Shuyak Is.	2.74

BOTTOM: S=SHELL,M=MUD,E=CONCRETE,N=SAND,H=HASH,C=CLAY,R=ROCK,B=RUBBLE COLLECTION METHOD: H=HAND,D=DREDGE SAMPLE TYPE: B=BIVALVE,S=SEDIMENT

Appendix B

Final Positions

NOAA NS&T MUSSEL WATCH PROJECT - 1995 - FINAL POSITIONS - WEST COAST

GERG #	SITE CODE	SITE NAME & LOCATION	STATE	NOS CHART #	Deg. Min Latitude	Deg. Min Longitude
401	IBNJ	NORTH JETTY IMPERIAL BEACH	CA	18872	32°35.26'	117°08.01'
402	SDCB	CORONADO BRIDGE SAN DIEGO BAY	CA	18773	32°41.19'	117°09.55'
403	PLLH	LIGHTHOUSE POINT LOMA	CA	18773	32°40.83'	117°14.93'
404	SDHI	HARBOR ISLAND SAN DIEGO BAY	CA	18773	32°43.48'	117°11.68'
405	MBVB	VENTURA BRIDGE MISSION BAY	CA	18765	32°46.05'	117°14.52'
406	LJLJ	POINT LA JOLLA LA JOLLA	CA	18765	32°51.09'	117°16.43'
407	OSBJ	MUNICIPAL BEACH JETTY OCEANSIDE	CA	18774	33°12.10'	117°23.62'
410	ABWJ	WEST JETTY ANAHEIM BAY	CA	18749	33°44.00'	118°06.06'
413	PVRP	ROYAL PALMS STATE PARK PALOS VERDES	CA	18746	33°43.02'	118°19.37'
415	MDSJ	SOUTH JETTY MARINA DEL RAY	CA	18744	33°57.69'	118°27.50'
417	PDPD	POINT DUME POINT DUME	CA	18744	34°00.10'	118°48.52'
422	SLSL	POINT SAN LUIS SAN LUIS OBISPO BAY	CA	18704	35°09.63'	120°45.35'
424	PGLP	LOVERS POINT PACIFIC GROVE	CA	18685	36°37.63'	121°54.99'
425	MBML	MOSS LANDING MONTEREY BAY	CA	18685	36°48.07'	121°47.38'
426	MBES	ELKHORN SLOUGH MONTEREY BAY	CA	18685	36°48.59'	121°47.11'
427	MBSC	POINT SANTA CRUZ MONTEREY BAY	CA	18685	36°57.25'	122°01.48'
428	SFDB	DUMBARTON BRIDGE SAN FRANCISCO	CA	18651	37°30.16'	122°07.28'
429	SFSM	SAN MATEO BRIDGE SAN FRANCISCO	CA	18651	37°34.68'	122°15.22'
431	SFEM	EMERYVILLE SAN FRANCISCO	CA	18652	37°49.23'	122°19.80'
433	TBSR	SPENGER'S RESIDENCE TOMALES BAY	CA	18643	38°08.97'	122°54.24'
435	BBBE	BODEGA BAY ENTRANCE BODEGA BAY	CA	18643	38°18.30'	123°03.96'
436	PALH	LIGHTHOUSE POINT ARENA	CA	18640	38°57.18'	123°44.58'
437	PDSC	SHELTER COVE POINT DELGADA	CA	18620	40°01.35'	124°04.40'
438	HMBJ	HUMBOLDT BAY JETTY EUREKA	CA	18622	40°45.85'	124°14.02'
439	EUSB	SAMOA BRIDGE EUREKA	CA	18622	40°49.29'	124°10.28'
441	SGSG	POINT ST. GEORGE CRESCENT CITY	CA	18603	41°44.87'	124°12.46'
443	CBRP	RUSSELL POINT COOS BAY	OR	18587	43°25.59'	124°13.17'
444	YBOP	ONEATTA POINT YAQUINA BAY	OR	18561	44°34.51'	123°59.34'
446	YHFC	FOGARTY CREEK YAQUINA BAY	OR	18520	44°50.22'	124°03.12'
447	TBHP	HOBSONVILLE POINT TILLAMOOK BAY	OR	18558	45°32.83'	123°54.45'
449	CRSJ	SOUTH JETTY COLUMBIA RIVER	OR	18521	46°13.72'	124°01.39'
452	GHWJ	WESTPORT JETTY GRAY'S HARBOR	WA	18502	46°54.70'	124°07.03'
457	PSHC	HOOD CANAL PUGET SOUND	WA	18441	47°49.91'	122°41.31'
458	SSBI	BUDD INLET SOUTH PUGET SOUND	WA	18456	47°05.96'	122°53.65'
465	WIPP	POSSESSION POINT WHIDBEY ISLAND	WA	18473	47°54.27'	122°22.59'
467	BBSM	SQUALICUM MARINA BELLINGHAM BAY	WA	18424	48°45.13'	122°29.87'
469	KTMP	MOUNTAIN POINT KETCHIKAN	AK	17428	55°17.63'	131°32.88'
470	NBES	EAST SIDE NAHKU BAY	AK	17317	59°27.20'	135°20.19'
471	PWSH	SHEEP BAY PRINCE WILLIAM SOUND	AK	16709	60°38.44'	145°59.41'
472	PWKH	KNOWLES HEAD - PWS	AK	16708	60°41.27'	146°34.57'
473	PVMC	MINERAL CREEK FLATS PORT VALDEZ	AK	16707	61°07.97'	146°27.66'
474	UISB	SIWASH BAY UNAKWIK INLET	AK	16700	60°57.65'	147°38.76'
475	PWDI	DISK ISLAND - PWS	AK	16705	60°29.58'	147°39.35'
476	GASL	SLEEPY BAY GULF OF ALASKA	AK	16702	60°04.04'	147°49.53'
477	GAWB	WINDY BAY GULF OF ALASKA	AK	16645	59°13.12'	151°31.02'
478	CIHS	HOMER SPIT COOK INLET	AK	16645	59°36.87'	151°26.65'
479	GASH	SHUYAK HARBOR GULF OF ALASKA	AK	16605	58°30.06'	152°37.31'